SPS-5 CONSTRUCTION REPORT SHRP Western Region

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TABLE OF CONTENTS

I.	Table of Contents	i									
П.	List of Figures	ii									
III.	List of Tables	iii									
IV.	Introduction	1									
V.	SPS - 5 General Criteria	1									
VI.	SPS - 5 Monitoring Requirements	SPS - 5 Monitoring Requirements									
VII.	Montana SPS - 5 Construction	11									
VIII.	Paving Operation	14									
IX.	Hot Plant	17									
X.	Traffic Control	18									
XI.	Problems	18									
XII.	Detailed Construction Notes A. Section 300502. B. Section 300503. C. Section 300504. D. Section 300505. E. Section 300506. F. Section 300507. G. Section 300508. H. Section 300510. J. Section 300511.										
XIII.	Appendices A. Appendix A Data Collection Sheets B. Appendix B Transverse Profiles and Overlay Thickness Data										

LIST OF FIGURES

I.	Figure 1. Illustrative Test Section For SPS - 5	2
II.	Figure 2. Field Material Sampling and Testing for the SPS - 5 Experi	ment6
III.	Figure 3. Preconstruction Testing	7,8
IV.	Figure 4. Post Construction Testing	9
V.	Figure 5. SPS - 5 Post Construction Sampling Layout	10
VI.	Figure 6. SPS - 5 Layout	13
VII.	Figure 7. Plant and Paver Pictures	20
VIII.	Figure 8. Belly Dump and Breakdown Roller Pictures	21
IX.	Figure 9. Passing Lane Delamination and Paver Pictures	22
X.	Figure 10. Lane Bevel Pictures.	23

LIST OF TABLES

I.	Table 1 Pavement Lift Thicknesses and Widths	16
II.	Table 2 Loose Laydown and Compacted Lift Thicknesses	5,27

SPS-5 Construction Report SHRP Section 300500

Big Timber, Montana

September 6-12, 1991

INTRODUCTION

A SHRP (Strategic Highway Research Program) SPS-5 (Specific Pavement Study)

experimental section was constructed on Interstate 90 near Big Timber, Montana, September 6

through 12, 1991. The SPS-5 experiment addresses the rehabilitation of asphalt concrete

pavements. Each experiment requires the construction of multiple test sections with similar

details and materials at each of 16 sites equally distributed in the four climatic regions. This

report discusses the construction of one site which is located in Montana.

SPS-5 GENERAL CRITERIA

The SPS-5 experiment was developed to investigate the performance of selected asphalt

concrete (AC) rehabilitation treatment factors. A standard SPS-5 experiment consists of nine

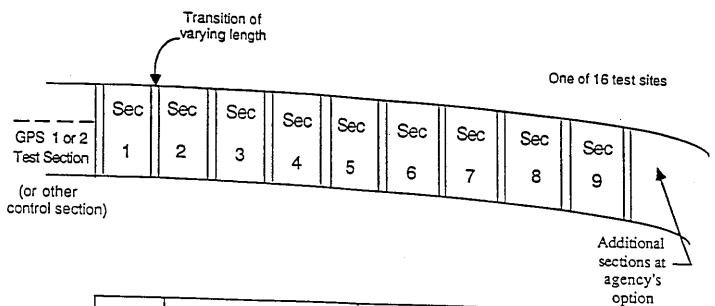
500-foot test sections. These sections include a control section and eight experimental sections,

as shown in Figure 1. The eight experimental sections are constructed using differing surface

preparations, differing overlay thicknesses and differing overlay materials. Four sections are

constructed on a minimally prepared surface and four on an intensively prepared surface. On

1



000.5	CURSAGE		or or
SPS-5 SECTION	SURFACE PREPARATION	OVERLAY MATERIAL	OVERLAY THICKNESS
1	Routine Maintenance	Control Section	0
2	Minimum	Recycled AC	2-inch
3	Minimum	Recycled AC	5-inch
4	Minimum	Virgin AC	5-inch
5	Minimum	Virgin AC	2-inch
6	Intensive	Virgin AC	2-inch
7	Intensive	Virgin AC	5-inch
8	Intensive	Recycled AC	5-inch
9	Intensive	Recycled AC	2-inch

Figure 1. Illustrative test section layout for SPS-5, rehabilitation of ashpalt concrete pavements.

each type of surface preparation both recycled (RAP) and virgin asphalt concrete mixtures are placed at both 2 inches and 5 inches. Therefore, the experiment consists of:

- Section 1 Control, routine maintenance.
- Section 2 2 inch RAP overlay with minimal surface preparation.
- Section 3 5 inch RAP overlay with minimal surface preparation.
- Section 4 5 inch virgin overlay with minimal surface preparation.
- Section 5 2 inch virgin overlay with minimal surface preparation.
- Section 6 2 inch virgin overlay with intensive surface preparation.
- Section 7 5 inch virgin overlay with intensive surface preparation.
- Section 8 5 inch RAP overlay with intensive surface preparation.
- Section 9 2 inch RAP overlay with intensive surface preparation.

The states were encouraged to add any additional test sections they wished to study and SHRP agreed to monitor them just as they monitor the SHRP SPS-5 sections.

The control section is designed to indicate the rate of change that could be expected for the test sections had they not been rehabilitated. Other requirements are the recycled mixture contain 30% RAP (recycled asphalt pavement) and the milled material on the intensive preparation sections be replaced with the same material as is used for the overlay on that section.

SPS-5 MONITORING REQUIREMENTS

PRECONSTRUCTION: Monitoring of the SPS-5 site consists of a distress survey, either manual or automated surveys completed every other year, profile data collection using a high speed profilometer completed every year, non-destructive testing using a Falling Weight Deflectometer (FWD) every five years, and coring and soil samples before construction. The distress survey is currently contracted out to and completed by PASCO (Photographic Aerial Survey Co.). PASCO creates a film of the distress throughout the section and prints a transverse profile every 50 feet. The distress survey may also be completed manually by mapping individual distress for each section. All cracking and other forms of distress are noted on a 1foot by 1-foot scale. The high speed profilometer produces a longitudinal profile of the travel lane for each section at 6-inch increments. The FWD drops a series of varying weights for a set pattern at 25 foot intervals to measure the deflection of the pavement. Coring and soil samples include extracting 4-inch, 6-inch, and 12-inch diameter pavement cores, six-inch auger probes, 12-inch bore holes, and a 6-foot by 4-foot test pit to a depth of 12 inches below the top of the untreated subgrade. Samples are either tested within the state or contracted out. Refer to Figure 2 for a table of preconstruction sampling requirements. Refer to Figure 3 for a table of preconstruction testing requirements.

POST CONSTRUCTION: Post construction monitoring of the SPS-5 site consists of a distress survey, profile data collection using a high speed profilometer, Falling Weight Deflectometer, and 4 inch core samples. The testing plan for the overlay is shown in figure 4. Sampling of

the overlay is completed no later than six months after construction. Core samples are taken outside the 500 foot test section, see Figure 5.

Program Scope for Field Material Sampling and Field Testing for the SPS-5 Experiment.

MATERIAL AND SAMPLE DESCRIPTION	NUMBER OF MATERIAL SAMPLES	SAMPLE TYPE DESIGNATION
PRE-CONSTRUCTION SAMPLING		1
1. Asphalt Concrete (original layer)		
Coring - 4" diam. cores Coring - 6" diam. cores Coring - 12" diam. cores Bulk Sampling (12" by 12" slab)	26 3 6 2	C1-C26 A1-A3 BA1-BA6 TP1
2. Unbound Base/Subbase Layers (per layer)		
Augering 6" diam. holes Bulk sampling in 12" diam. holes Bulk sampling in test pit In situ density and moisture content (nuclear gauge) Moisture content samples	3 6 1 1	A1-A3 BA1-BA6 TP1 TP1 TP1,BA1-BA6
3. Bound Base/Subbase Layers (per layer)		
Coring - 4" diam. cores Coring - 6" diam. cores Coring - 12" diam. cores	6 3 6	C4,C5,C15,C16,C23,C24 A1-A3 BA1-BA6
4. Subgrade		<u> </u>
Splitspoon sampling Thin-walled tube sampling (* 2 tubes or 2 spoons or	6* 6*	A1-A3 A1-A3
combination per hole) Bulk sampling in 12" diam. holes Bulk sampling in test pit In situ density and moisture conten	6 1 1	BAI-BA6 TP1 TP1
(nuclear gauge) Moisture content samples	8 .	BA1-BA6,TP1
5. Shoulder Auger Probes	3	S1-S3
POST - CONSTRUCTION SAMPLING		
1. Asphaltic Concrete (overlay)		
Coring - 4" diam. cores	40	C27-C66

Figure 2

SPS-5 Laboratory Testing Plans (Pre-Construction)

		terial Type d Properties	SHRP Test Designation	SHRP Protocol	No. of Tests per Layer	
PRE-CON	TTTTT			***********	*********	***************************************
ı.	ASP	HALT CONCRETE				
	A.	ASPHALTIC CONCRETE:				
		Core Examination/Thickness	ACO1	P01	26	ALL C-TYPE CORES
		Bulk Specific Gravity	ACO2	P02	9	[C3 C4 C5], [C13 C14 C15], [C22 C23 C24] (see note 3)
		Maximum Specific Gravity	ACO3	P03	3	(BA1-3), (TP), (BA4-6)
		Asphalt Content (Extraction)	ACO4	P04	3	(BA1-3), (TP), (BA4-6)
		Creep Compliance	AC06	P06	3	C2, C9, C20 (see note 1)
		Resilient Modulus	ACO7	P07	6	[C4 C5], [C14 C15], [C23 C24]
		Tensile Strength	AC07	P07	9	[C3 C4 C5], [C13 C14 C15], [C22 C23 C24]
		Field Hoisture Damage	AC08	P08	3	A1, A2, A3
	B.	EXTRACTED AGGREGATE:				•
	•	Type and Classification:				
		Coarse Aggregate	AG03	P13		(BA1-3) [TP] {BA4-6]
		Fine Aggregate	AG03	P13	3	[BA1-3] [TP] (BA4-6)
		Gradation of Aggregate	AGO4	P14	3	[BA1-3] [TP] [BA4-6]
		NAA Test for Fine				1
		Aggregate Particle Shape	AG05	P14A (note	2) 3	[BA1-3] [TP] {BA4-6]
	c.	ASPHALT CEMENT:				
		Abson Recovery	AEO1	P21	3	(BA1-3) (TP) (BA4-6)
•		Penetration at 77 and 115° F	AE02	P22	3	[BA1-3] [IP] [BA4-6]
		Specific Gravity (60F)	AE03	P23	3	(BA1-3) [IP) [BA4-6]
		Viscosity at 77F	AEO4	P24	3	[BA1-3] [TP] [BA4-6]
		Viscosity at 140F,275F	AE05	P25	3	[BA1-3] [TP] [BA4-6]

Creep compliance will be performed when suitable procedures are developed -- cores will be stored. NOTES: 1

National Aggregate Association will perform tests at no cost to the State. 2

Cores within brackets are from the same sampling area. 3

SPS-5 Laboratory Testing Plans (Pre-Construction) continued.

Naterial Type and Properties	SHRP Test Designation	SHRP Protocol	No. of Tests per Layer	Material Source/ Sample Type Designation
II. BOUND (TREATED) BASE AND SUBBASE				
Type and Classification of Material and Treatment	7801	P31	3	[C4 C5] [C15 C16] [C23 C24]
Pozzolanic/Cementitious: Compressive Strength	1902	P32	3	[C4 C5] [C15 C16] [C23 C24]
Asphalt treated: Dynamic Modulus (77F)	TB03	P33	3	[C4 C5] [C15 C16] [C23 C24]
HMAC: Resilient Modulus	ACO7	P07	3	[C4 C5] [C15 C16] [C23 C24]
111. UNBOUND GRANULAR BASE AND SUBBASE				
Particle Size Analysis Sieve Analysis (washed) Atterberg Limits Moisture-Density Relations Resilient Modulus Classification Permeability Matural Moisture Content	UG01 UG02 UG04 UG05 UG07 UG08 UG09 UG10	P41 P43 P44 P46 P47 P48 P49	3 3 3 3 3	(BA1-3) [TP] [BA4-6] [BA1-3] [TP] [BA4-6]
IV. SUBGRADE Sieve Analysis Hydrometer to 0.001mm Atterberg Limits Classification Moisture-Density Relations Resilient Modulus Unit Weight Natural Moisture Content Depth to Rigid Layer	\$\$01 \$\$02 \$\$03 \$\$04 \$\$05 \$\$07 \$\$08 \$\$09	P51 P42 P43 P52 P55 P46 P56 P49	3 3 3 3 3 3	[BA1-3] [TP] [BA4-6] [BA1-3] [TP] [BA4-6] [BA1-3] [TP] [BA4-6] [BA1-3] [TP] [BA4-6] [BA1-3] [TP] [BA4-6] A1 A2 A3 or [BA1-3] [TP] [BA4-6] [BA1-3] [TP] [BA4-6] [BA1-3] [TP] [BA4-6] S1 S2 S3

Figure 3

9

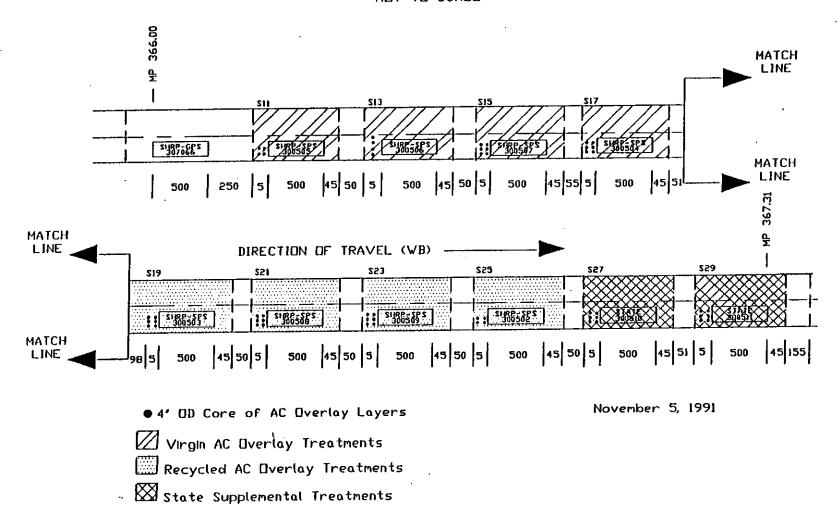
SPS-5 Laboratory Testing Plans (Post-Construction)

	Material Type and Properties	SHRP Test Designation	SHRP Protocol	No. of Tests per Layer	Material Source/ Sample Type Designation
Α.	ASPHALTIC CONCRETE:				
	Core Examination/Thickness	ACO1	P01	40 A	LL CORES
	Bulk Specific Gravity	ACO2	POZ	40 A	LL CORES
	Maximum Specific Gravity	- ACO3	P03	6 B'	V1, BV2, BV3, BR1, BR2, BR3
	Asphalt Content (Extraction)	ACO4	P04	6 B	V1, 8V2, BV3, BR1, BR2, BR3
	Moisture Susceptibility	AC05	P05	6 81	V1, BV2, BV3, BR1, BR2, BR3
	Creep Compliance	AC06	P06	2 (1	C51 C52 C53], [C57 C58 C59] (see note 1)
	Resilient Modulus	AC07	P07	6 (C	32 C33] [C35 C36] [C38 C39] [C41 C42] [C55 C56] [C61 C62]
	Tensile Strength	ACO7	P07	18 (6	C31 C32 C33] [C34 C35 C36] [C37 C38 C39]
				Ĭ.	C40 C41 C42) [C54 C55 C56) [C60 C61 C62]
e.	EXTRACTED AGGREGATE:				
	Bulk Specific Gravity:	~	•		
	Coerse Aggregate	AG01	P11	6 81	V1, BV2, BV3, BR1, BR2, BR3 .
	Fine Aggregate	AG02	P12	6 B\	V1, BV2, BV3, BR1, BR2, BR3
	Type and Classification:				
	Coarse Aggregate	AG03	P13	6 81	V1, BV2, BV3, BR1, BR2, BR3
	Fine Aggregate	AG03	P13	6 B\	V1, BV2, BV3, BR1, BR2, BR3
	Gradation of Aggregate	AG04	P14	6 B\	V1, BV2, BV3, BR1, BR2, BR3
	NAA Test for Fine				• • • •
	Aggregate Particle Shape	AG05	P14A (note	2) 6 B\	V1, 8V2, BV3, BR1, BR2, BR3
c.	ASPHALT CEMENT:				·
	Abson Recovery	AE01	P21	6 8\	V1, BV2, BV3, BR1, BR2, BR3
	Penetration at 77 and 115 'F	AE02	P22	6 B\	V1, BV2, BV3, BR1, BR2, BR3
	Specific Gravity (60F)	AE03 .	P23	6 8\	V1, BV2, BV3, BR1, BR2, BR3
	Viscosity at 77F	AEO4	₽24	6 BV	V1, BV2, BV3, BR1, BR2, BR3
	Viscosity at 140F,275F	AE05	P25	6 BV	V1, BV2, BV3, BR1, BR2, BR3

Creep compliance will be performed when suitable procedures are developed -- cores will be stored. National Aggregate Association will perform tests at no cost to the State. NOTES: 1

²

SPS-5 POST CONSTRUCTION SAMPLING LAYOUT 3005 I-90, WEST OF BIG TIMBER, MONTANA NOT TO SCALE



MONTANA SPS - 5 CONSTRUCTION

Ten test sections were constructed by the Montana Department of Transportation (MDOT) as part of SHRP SPS-5 experiment. These test sections, each 500 feet long, are located in the travel lane in the west-bound direction of Interstate 90 between M.P. 366.00 and M.P. 367.31. Terrain over the entire section was relatively flat with a slight horizontal curve at the last two SHRP sections (300509 and 300502). Four sections of virgin mix and four sections of recycle mix were constructed along with two state supplemental sections. The recycled mix consisted of 30% RAP (Recycled Asphalt Pavement) mixed with asphalt and virgin aggregate. Both the virgin and the recycled asphalt mixes utilized the same asphalt cement.

Minimum preparation consisted of cold milling the open graded friction course of 0.96". Intensive preparation consisted of cold milling two inches of the entire surface layer in addition to milling the open graded friction coarse.

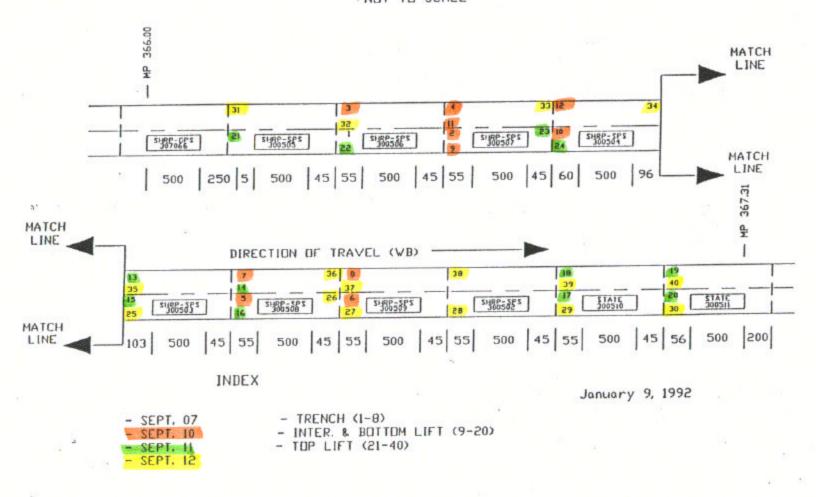
Montana Department of Transportation (MDOT) constructed two supplemental sections as part of its own experiment with Polybuilt and Kraton modified asphalt cement. Section 300510 was overlaid with an asphalt containing a polymer additive called a Polybuilt modifier developed by Exxon products, which was added to the virgin aggregate. This section had a final overlay thickness of five inches. Section 300511 was overlaid with a Kraton modified asphalt, developed by Shell products which was added to the virgin aggregate. The overlay thickness

for this section was also five inches. Both of these state supplemental sections had minimal surface preparation, i.e. only the open graded friction course was milled.

Section 300501 was originally laid out to be the control section for this experiment, however, due to the extensive deterioration of the roadway, MDOT requested a control section not be used. Montana's position was that the section would require rehabilitation, for safety reasons, within one full year and therefore, it would be very costly to come back in and overlay one section. Also, this section was unique in the fact that it has a GPS section located directly before the SPS sections. Therefore, MDOT proposed SHRP use this section as the "control," since it was monitored in 1989, 1990 and 1991, resulting in three data points prior to overlay. The three test dates should provide enough data to estimate the rate of deterioration. This GPS section was rehabilitated by removing the open graded friction coarse (OGFC) and adding a 2" lift of hot mix asphalt cement (HMAC) at the same time as the SPS sections were constructed and therefore, a control section no longer exists. SHRP agreed to this proposal. See Figure 6 for Montana's SPS-5 layout and construction sequencing. The numbers at the corners of each section depict the order of the paving operation.

The construction of the test sections began with milling operations on September 6, 1991 and paving operations ended September 12. The contractor was Empire Construction Inc of Billings, Montana. SHRP representatives present during construction were Mr. Jim Stevenson, MDOT; Mr. John Klemunes, SHRP/FHWA; and Mr. Pete Pradere, Nichols Consulting

SPS-5 LAYOUT 3005 I-90, WEST OF BIG TIMBER, MONTANA NOT TO SCALE



Engineers (WRCOC). Mr. Pradere was present for the milling and the first day of paving operations.

PAVING OPERATION

The following is a brief summary of the construction. Weather conditions were clear and sunny with a temperature of about 70°F, except for the first day of paving. Rain interrupted the paving operation September 7 nine feet into the second mill replacement trench section (300507).

A CMI 1000 with a 12.5 ft cutting width was used to mill the open graded mix, 0.96" from both lanes and shoulders for a total width of 38 feet. Milling of the OGFC was completed prior to SHRP representatives on-site visit. A CMI 750 with a cutting width of 12.5 feet was used to mill the SHRP and passing lanes original hot mix asphalt concrete on the intensive sections averaging 2.1 inches in depth per section. The shoulders were not milled. After the milling operation was complete, a Rod and Level survey was completed in the milled sections. When both lanes were milled, delamination had occurred only in the passing lane near center line.

All sections were broomed prior to a tack coat application. A tack coat of SS-1 emulsion was applied at a rate of 0.1 gallon per square yard. The dilution rate was not known.

The paving operations were as follows: The hot plant was located about 2 miles from the test sections. Belly dumps were used to haul the asphalt concrete and then unloaded to form

a windrow in the middle of the paving lane. The paver used a Cocal to pickup the asphalt from the windrow and load it into the hopper of the paving machine. The paving machine then proceeded to lay the asphalt. Paving operations were conducted with a Blaw-Knox 220 Paver utilizing a 30-foot ski for the electronic grade controls. Refer to Table 1 on Lift thicknesses and pavement widths. For intermediate and top lifts, a one foot wide beveled lane to lane joint and a three foot wide beveled lane to shoulder joint was used. When the sections were completed, the asphalt overlay appeared uniform with no segregation. All longitudinal joints were tight and uniform. When paving was completed for the day, a vertical face on the transverse joint was left in the transition zone. Problems were encountered with lift thickness and are discussed in detail in each sections comments and on page 18.

Compaction was accomplished with two rollers. The breakdown roller was a double steel drum 15 ton Dynapac CC50. Rolling included one vibrating pass with a frequency of 2500 cycles/minute and one static pass. The finishing roller was a double steel drum 10 ton Rex 1000. Rolling included one vibrating pass with a frequency of 2100 cycles/minute and one static pass. Both roller speeds were an average of 2.5 mph for vibrating and an average of 3.5 mph for static. A pneumatic rubber tired rolled was not utilized on this project. All sections used the same rolling pattern, one static and one vibratory pass for each roller. Initial compaction of the longitudinal beveled joint was minimal at best but was recompacted when the lift in the passing lane was placed. Density measurements were taken with a Troxler 3440 by MDOT. Two tests per lift per 500 foot section were taken. All density measurements passed. All equipment was relatively new and in good working order.

PAVEMENT LIFT THICKNESSES AND LANE WIDTHS

	Minimum Prepa	tration 2 is	nch Overlay	Minimum Preparation 5 inch overlay							
	SHRP Lane		Passing	Lane		SHRP Lane Pas					
Lift	Thickness (Feet) Thic		Compacted Thickness (Inches)	Width (Feet)	Lift	Compacted thickness (Inches)	Width (Feet)	Compacted thickness (Inches)	Width (Feet)		
Тор	Top 2.0 22 2.0 16			Bottom	2.0	22	2.0	16			
				Тор	3.0	22	2.0	16			
	Intensive Prepa	ration 2 in	ch Overlay	Intensive Preparation 5 inch Overlay							
Ş	SHRP Lane		Passing	Lane	SHRP Lane Passing Lane						
Lift	Compacted thickness (Inches)	Width (Feet)	Compacted Thickness (Inches)	Width (Feet)	Lift	Compacted Thickness (Inches)	Width (Feet)	Compacted Thickness (Inches)	Width (Feet)		
Trench Replacment	2.0	12.5	2.0	12.5	Trench Replacement	2.0	12.5	2.0	12.5		
Тор	2.0	22	2.0	16	Bottom	2.0	22	2.0	16		
					Тор	3.0	22	3.0	16		

Note: Virgin and recycled lift thicknesses were similar

Generally, three uncompacted thickness measurements were taken on each edge of every paving pass within a section and compacted thickness were taken when possible. All measured values are reported in the "Detailed Construction Notes" section of this report.

HOT PLANT:

The hot plant was a Boeing 4000 which was coal fired. The plant had a three bin setup; one coarse, one fine, and one RAP. The plant did not have a center feed for recycled mix and therefore, the RAP was combined with the coarse and fine aggregate on the feeder belt for the recycled mix. The recycled mixture contained the same asphalt cement and aggregate source used in the virgin mixture. Some concern was indicated due to the RAP material being fed into the plant near the burner. Mr. Jim Stevenson, of MDOT, did a visual inspection of the plant and said there was not a significant amount of smoke emitted from the plant when the recycled mix was used.

Several different samples were collected during the construction. The RAP mixture on grade was similar to the virgin aggregate. Both aggregate and asphalt samples were collected at the plant under Mr. Stevensons' supervision. These samples were collected the morning of September 10, 1991. The asphalt cement samples consisted of 11 five gallon pails and were sampled from a feed line between the storage tank and the hot plant. Two fifty-five gallon drums of the virgin aggregate were taken from the sample splitter on the cold feed belt to the

hot plant. The RAP aggregate required sampling from the stockpile with a front end loader. All mixture samples were collected in the field under the supervision of Mr. Stevenson. The asphalt concrete samples were taken on the afternoon of September 11, 1991. The samples, consisting of a total of 4 five gallon pails, were taken from the top lift of the travel lane near station 2+50 of the section 300506 (2 pails) and station 2+50 of section 300507 (2 pails). The recycled asphalt concrete was sampled in the field the morning of September 12, 1991. A total of 4 five gallon pails were extracted from the top lift of the travel lane; 2 pails near station 2+50 of section 300508 and 2 pails near station 2+50 of section 300509.

TRAFFIC CONTROL:

West bound traffic was diverted on a frontage road on September 6, to allow intensive milling and paving operations to begin. Traffic was not returned to the Interstate until all paving was completed on September 12, 1991. See Figures 7 - 10 for pictures of the construction operations.

PROBLEMS:

Overall, construction of the job went well. The only concerns brought up were from Mr. Stevenson about the lift thicknesses. Specifics of the lift thicknesses are discussed in the detailed construction notes. One reason for the varying lift thicknesses may be from the paver weight. Paving of the top lift required more hot mix due to additional widths and depth causing the

hopper in the paver to be overloaded and empty at times. This may have caused a weight distribution problem with the paver. Another possible reason is a malfunction in the electronic grade control. Mr. Stevenson had the contractor shut off the electronic controls for the 30 foot ski on some of the intermediate and top lifts to see if this was having an effect of the lift thickness. Once the contractor had shut off the electronic controls, lift thicknesses were somewhat more uniform although they still varied. When the contractor would cease paving for the day or go to the other lane, he would resume the use of the electronic controls.



PAVER AND COCAL PICKUP



AGGREGATE FEED ON DRUM DRYER WHERE PLANT SAMPLES WERE TAKEN

FIGURE 7



BELLY DUMP DELIVERING HOT MIX



BREAKDOWN ROLLER COMPACTING THE INTERMEDIATE LIFT FIGURE 8



INTERMEDIATE LIFT BEHIND PAVER



DELAMINATION OF PASSING LANE AFTER MILLING OPERATION FIGURE 9



3 Ft LANE TO SHOULDER BEVEL



1 Ft LANE TO LANE BEVEL FIGURE 10

DETAILED CONSTRUCTION NOTES

Below is a summary of the construction activities and data collected during the construction operations on a section by section basis. All loose and compacted lift thicknesses were measured during construction by pushing a probe into the asphalt and measuring the penetration with a ruler. A standard procedure of measuring lift thickness consisted of a left and right side lane measurement at stations 0+00, 2+50 and 5+00. See Table 1 for a listing of the lift thicknesses measured for each section. Appendix A contains completed construction data forms as required by SHRP. Appendix B contains transverse profiles and overlay thickness data for each SHRP section.

Loose Laydown and Compacted Lift Thicknesses

								<u>, </u>	and C	mpact	cu Liit	Thicki	lesses					<u>_</u> ;		
	<u> </u>	· · · ·				e Laydo][Compacted						
Section		rench R	eplacme (Inch)	nt Lift	<u> </u>	Intermediate Lift (Inch)				Top Lift (Inch)				rench ement Lift Inch)	Intermediate Lift (Inch)		Top Lift (Inch)			
	SHR	P Lane	Passi	ng Lane	SHR	P Lane	Passi	ng Lane	SHR	SHRP Lane Pas		SHRP Lane Pas		ng Lane	SHRP Lane	Passing Lane	SHRP Lane	Passing Lane	SHRP Lane	Passing Lane
300507	CL	RT	CL	LT	CL	RT	CL	LT	CL	RT	CL	LT								
0+00	2.5	2.25	2.75	2.5	2.5	2.5	2.5	2.5	4.5	3.75	3,75	3.75				 	1	<u> </u>		
1+50	2.5	3	3.5	3.5	3.5	3.5	2.5	2.5	3.5	3.5	3.75	3.75	2.75							
2+50	3.5	<u> </u>	<u> </u>		 	<u> </u>														
5+00	3	3	2.75	3,25	2.5	2.0	2.5	2.0	3.75	3.5	3.5	3.25								
300508	 																			
0+00	2.5	3.0	3.0	3.0	2.5	2.5	2.5	2.25	4.0	3.75	3.5	3.5								
2+50	2.5	2.75	2.75	2.75	2.5	2.5	2.5	2.5	3.75	3.75	3.5	3.5	2.25							
5+00	2.5	2.5	2.75	3.5	2.75	2.75	2.5	2.5	3.75	3.75	3.5	3.5	1.75							
300509																				
0+00	3.0	2.5	2.75	3.5					2.5	2.5	2.5	2.5								
2+50	2.5	2.75	2.75	2.75					2.75	2.5	2.5	2.5				<u>-</u>				
5+00	2.5	2.5	3.0	2,75					2.5	2.5	2.5	2.5	2.0					 -		
300510																				
0+00					2.5	2.5	2.5	2.75	3.25	3.25										
2+50					2.5	2.5	2.5	2.5	3.5	3.5			-							
5+00					2.5	2.5	2.5	2.5	3.5	3.5					·	·		·		
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2+50					2.5	2.5	2.5	2.75	3.75	3.75										
5+00					3.0	3.0	3.0	3.0	3.75	3.75										

Section 300502 MINIMUM PREPARATION 2" RECYCLE MIX

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: Paving started September 12 with a tack coat applied prior to paving. Paving started at 10:00 A.M. and ended at 10:30 A.M. The aggregate was well covered and the mixture looked good. The windrow temperature was 272°F with a laydown temperature of 245°F and a loose laydown lift thickness varying greatly. This section had more variance in lift thickness than all the other sections. Refer to page 18 for possible reasons behind varying lift thickness. Station 0+00 had a loose thickness of 3 inches, station 1+00 was 1.76 inches, station 2+50 was 2.25 inches, and station 5+00 was 2.5 inches. Due to the contractors operation, compacted lift thicknesses were not taken.

PASSING LANE: Paving the passing lane started September 12 with a tack coat applied prior to paving. Paving started at 1:00 P.M. and ending at 1:30 P.M. The windrow temperature was 271°F with a mean laydown temperature of 257°F and a loose laydown lift thickness of 2.5 inches. Due to the contractors operation, compacted lift thicknesses were not taken.

Section 300503 MINIMUM PREPARATION 5 INCH RECYCLE MIX

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: The bottom lift was paved September 11 with a tack coat applied prior to paving. Paving began at 12:20 P.M. and ended at 12:35 P.M. The recycled aggregate was well covered and the mixture looked good. Windrow temperature was 267°F with a laydown temperature of 237°F and a loose laydown depth of 2.5 inches at stations 1+00 and 5+00 and a depth of 2 inches at station 0+00 and 2.75" at station 2+50.

The top lift was paved September 12 with a tack coat applied prior to paving. Paving began at 7:38 A.M. and ended at 8:15 A.M. Windrow temperature was 267°F with a laydown temperature of 244°F and an average loose lift thickness of 3.75 inches. Lift thickness at station 0+00 was 3.5 inches.

The windrows were not large enough so the contractor had the loader move hot mix from further up the windrow to the paver so the paver would not have to stop. In doing this, the loader tracked grass onto the tack coat. Approximately 10% of the shoulder and a few feet of the SHRP lane were covered with dried grass. The paver laid a lift over the grass on the SHRP lane.

PASSING LANE: The bottom lift was started September 11 with a tack coat applied prior to paving. Paving began at 11:30 A.M. and ended at 11:45 A.M. Windrow temperature was

261°F with a loose laydown temperature of 239°F and a loose laydown depth of 2.5 inches at station 2+50 and station 5+00. Station 0+00 had a loose laydown thickness of 1.75 inches.

The top lift was paved September 12 with a tack coat applied prior to paving. Paving began at 3:20 P.M. and ended at 3:39 P.M. Windrow temperature was 276°F with a laydown temperature of 261°F and a loose laydown depth of 3.5 inches throughout the section. Due to the contractors operations, compacted lift thicknesses were not taken.

Section 300504 MINIMUM PREPARATION 5 INCH VIRGIN MIX

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: The bottom lift was paved September 10 with a tack coat applied prior to paving. Paving began at 4:15 P.M. and ended at 4:45 P.M. Windrow temperature was 274°F with a laydown temperature of 258°F and a loose laydown depth of 2.0 inches at station 2+50 and 3.0 inches at station 5+00. The rest of the section measured 2.5 inches in depth.

The top lift was started September 11 with a tack coat applied prior to paving. Paving began at 6:30 P.M. and ended at 7:00 P.M. Windrow temperature was 279°F with a laydown temperature of 268°F and a loose lift thickness of 3.75 inches at station 0+00. The loose lift thicknesses at station 2+50 and 5+00 was 3.5 inches.

The windrows were not large enough so the contractor had the loader move hot mix from further up the windrow to the paver so the paver would not have to stop. In doing this, the loader brought grass from its tires onto the tack coat. Approximately 10% of the shoulder and a few feet of the SHRP lane were covered with dried grass. The paver laid a lift over the grass on the SHRP lane. Due to the contractors operations, compacted lift thicknesses were not taken.

PASSING LANE: The bottom lift was started September 10 with a tack coat applied prior to paving. Paving began at 5:05 P.M. and ended at 5:25 P.M. Windrow temperature was 284°F with a laydown temperature of 275°F and a loose laydown depth of 2.5 inches throughout the section.

The top lift was started September 12 with a tack coat applied prior to paving. Paving began at 2:15 P.M. and ended at 2:37 P.M. Windrow temperature was 280°F with a laydown temperature of 269°F and a loose laydown depth of 3.5 inches. Due to the contractors operations, compacted lift thicknesses were not taken.

Section 300505 MINIMUM PREPARATION 2 INCH VIRGIN MIX

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: The top lift was paved on September 11 with a tack coat applied prior to paving. Paving started at 5:00 P.M. and ending at 5:30 P.M. The windrow temperature was 282°F with a mean laydown temperature of 267°F and a loose laydown lift thickness of 2.5 inches

throughout the section. Due to the contractors operation, compacted lift thicknesses were not taken.

PASSING LANE: Paving of the bottom lift started September 12 with a tack coat applied prior to paving. Paving started at 1:00 P.M. and ending at 1:30 P.M. The mean laydown temperature was 266°F with a loose laydown lift thickness of 2.5 inches in depth throughout the section. Due to the contractors operation, compacted lift thicknesses were not taken.

Section 300506 INTENSIVE PREPARATION 2 INCH VIRGIN MIX

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth. September 6, 1991, a 25 foot wide trench was milled an average of 2.1 inches in depth the entire 500 feet with a 25 foot transition on both ends outside of the 500 foot section. Milling of the intensive sections was accomplished by making two passes, one on the SHRP lane and one on the passing lane using a 12.5 foot cutting head. When both lanes were milled, minor delamination had occurred in the passing lane near the centerline of the roadway. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: The weather was overcast with a chance of rain, but the contractor started to pave. Paving of the trench replacement started September 7 with a tack coat applied prior to paving. Paving began at 12:17 P.M. and ended at 12:32 P.M. The windrow temperature was

290°F with a mean laydown temperature of 245°F and a loose laydown lift thickness of 2.7 inches in depth at station 5+00 and 2.5 inches in depth at station 0+00. By the time the contractor had completed paving of the trench section, it started to drizzle. The contractor continued to pave until 9 feet into section 300507 at which time it was pouring rain and a vertical transverse joint was made.

The top lift was started September 11 with a tack coat applied prior to paving. Paving began at 5:30 P.M. and ended at 6:00 P.M. Windrow temperature was 275°F with a laydown temperature of 257°F and a loose laydown lift thickness between 2.5 inches at station 0+00 to 2.8 inches at station 3+50. Due to the contractors operation, compacted lift thicknesses were not taken.

PASSING LANE: Since a tack coat had been applied to both the SHRP and the passing lanes of the trench sections of the virgin mix on September 7 before it started to rain, a second tack coat was placed prior to paving of the trench replacement on September 10. Paving started at 12:45 P.M. and ended at 1:00 P.M. The windrow temperature was 276°F with a mean laydown temperature of 270°F and a laydown lift thickness of three inches throughout the section. A 1 foot long section in the windrow at stations 4+25 and 4+85 had some contamination in the mixture. There were a few clumps of mud stuck on the aggregate in each contaminated spot. The contractor removed the contaminated material from the windrow. Later, the consensus was some mud had dropped into the mix from the bottom of the belly dump.

The top lift was started on September 12 with a tack coat applied prior to paving. Paving began at 1:30 P.M. and ended at 1:55 P.M. Windrow temperature was 283°F with a laydown

temperature of 273°F and a loose laydown depth of 2.5 inches at stations 0+00 and 2+50. Loose laydown depth at station 5+00 was 2.75 inches, a little thicker than specified. Due to the contractors operation, compacted lift thicknesses were not taken.

Section 300507 INTENSIVE PREPARATION 5 INCH VIRGIN MIX

September 3, 1991, the open graded asphalt was milled a depth of 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth. September 7, 1991, a 25 foot wide trench was milled an average depth of 2.0 inches the entire 500 feet with a 25-foot transition on both ends outside of the 500 foot section. When both lanes were milled, minor delamination had occurred in the passing lane near centerline. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: Rain on September 7 caused the paving of the SHRP lane trench replacement section to cease 9 feet into the section so a second tack coat was applied prior to paving the trench section on September 10. Paving began at 12:15 P.M. and ended at 12:37 P.M. The windrow temperature was 279°F with a laydown temperature of 266°F and a loose laydown depth between 2.25 inches at station 0+00 to 3.5 inches at station 2+50. The compacted lift measured 2.75 inches in depth at station 2+50.

A 1 foot long section in the windrow at station 4+50 had some contamination in the mixture. There were a few clumps of mud stuck on the aggregate in each contaminated spot.

The majority of the material was removed from the windrow. The contaminated material was mud from the bottom of the belly dump.

The intermediate lift was started September 10 with a tack coat applied prior to paving. Paving began at 4:00 P.M. and ended at 4:15 P.M. Windrow temperature was 285°F with a laydown temperature of 263°F and a loose laydown depth of 2.5 inches throughout the section.

The top lift was started September 11 with a tack coat applied prior to paving. Paving began at 6:00 P.M. and ended at 6:30 P.M. Windrow temperature was 285°F with a laydown temperature of 268°F and a loose lift thickness of 4.5 inches at station 0+00 to 3.5 inches at station 2+50. Mr. Stevenson expressed concern to the contractor about the variance in lift thickness of the SHRP lane and had them shut off the electronic controls.

The windrows were not large enough so the contractor had the loader take hot mix further up from the windrow and bring it closer to the paver so the paver wouldn't have to stop. In doing this, the loader tracked grass from its tires onto the tact coat causing the grass to stick. Approximately 10% of the shoulder and a few feet of the SHRP lane were covered with dried grass. The paver laid a lift over the grass on the SHRP lane.

The contractor had a problem with variations in the lift thickness, possibly due to the paver becoming overloaded and then empty on the top lift of the SHRP lane. Refer to 'PROBLEMS' on page 18.

PASSING LANE: The bottom lift was paved September 10, 1991 with a tack coat applied prior to paving. Paving began at 1:00 P.M. and ended at 1:15 P.M. Windrow temperature was

277°F with a laydown temperature of 270°F and a loose laydown thickness of 2.5 inches at station 0+00 to 3.5 inches at station 2+50.

The intermediate lift was started September 10 with a tack coat applied prior to paving. Paving began at 4:45 P.M. and ended at 5:05 P.M. Windrow temperature was 283°F with a laydown temperature of 263°F and a loose laydown depth of 2.5 inches throughout the section.

The top lift was started September 12 with a tack coat applied prior to paving. Paving began at 1:55 P.M. and ended at 2:15 P.M. Windrow temperature was 288°F with a laydown temperature of 267°F and a laydown depth of 3.75 inches at stations 0+00 and 2+50. The pavement thickness measured at station 5+00 was 3.5 inches.

The contractor had a problem with variations in the lift thickness, possibly due to the paver becoming overloaded and then empty on the top lift of the passing lane. Refer to 'PROBLEMS' on page 18. Due to the contractors operations, compacted lift thicknesses were not taken.

Section 300508 INTENSIVE PREPARATION 5 INCH RECYCLE MIX

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth. September 7, 1991, a 25 foot wide trench was milled an average of 2.0 inches in depth the entire 500 feet with a 25 foot transition on both ends outside of the 500 foot section. When both lanes were milled, minor delamination had occurred in the passing lane near center line. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: Paving of the trench section was started September 10 with a tack coat applied prior to paving. Paving began at 1:35 P.M. and ended at 1:50 P.M. The windrow temperature was 270°F with a laydown temperature of 257°F and a loose laydown depth of 2.5 inches on the right side of the section. At the centerline, the right edge varied from 3 inches at station 0+00 to 2.5 inches at station 5+00. A 1 foot long section in the windrow at station 0+50 had some contamination in the mixture. There were a few clumps of mud stuck on the aggregate in each contaminated spot. The contractor removed most of the visible contaminants. The contaminated material was mud from the bottom of the belly dump.

The intermediate lift was started September 11 with a tack coat applied prior to paving. Paving began at 12:35 P.M. and ended at 12:55 P.M. Windrow temperature was 263°F with a laydown temperature of 248°F and a loose laydown depth of 2.5 inches at station 0+00 and 2.75 inches at station 5+00.

Paving of the top lift began September 12 with a tack coat applied prior to paving. Paving began at 8:15 A.M. and ended at 9:00 A.M. Windrow temperature was 271°F with a laydown temperature of 246°F and a lift thickness of 3.75 inches throughout the section. The windrows were not big enough so the contractor had the loader move hot mix from further up the windrow to the paver so the paver would not have to stop. In doing this, the loader tracked grass from its tires onto the tack coat. Approximately 10% of the shoulder and a few feet of the SHRP lane were covered with dried grass. The paver laid a lift over the grass on the SHRP lane.

PASSING LANE: The passing lane trench section was paved September 10, 1991 with a prior application of tack coat. Paving began at 2:30 P.M. and ended at 2:45 P.M. Windrow temperature was 275°F with a laydown temperature of 269°F and a loose laydown depth between 2.75 inches at station 2+50 and 3.5 inches at station 5+00.

The intermediate lift was started September 11 with a tack coat applied prior to paving. Paving began at 11:45 A.M. and ended at 12:15 P.M. Windrow temperature was 263°F with a laydown temperature of 233°F and a loose laydown depth of 2.5 inches.

The top lift was started September 12 with a tack coat applied prior to paving. Paving began at 3:39 P.M. and ended at 4:00 P.M. Windrow temperature was 272°F with a laydown temperature of 257°F and a loose laydown depth of 3.5 inches throughout the section. Due to the contractors operation, compacted lift thicknesses were not measured.

Section 300509 INTENSIVE PREPARATION 2 INCH RECYCLE MIX

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth. September 7, 1991, a 25 foot wide trench was milled an average of 2.0 inches in depth the entire 500 feet with 25 foot transitions on both ends outside of the 500 foot section. When both lanes were milled, minor delamination had occurred in the passing lane near centerline. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: Paving of the trench replacement began September 10 with a tack coat applied prior to paving. Paving started at 1:50 P.M. and ended at 2:10 P.M. The windrow temperature was 263°F with a mean laydown temperature of 250°F and a loose laydown lift thickness of 2.5 inches at stations 2+50 and 5+00 and 3.0 inches at station 0+00.

The top lift was paved September 12 with a tack coat applied prior to paving. Paving began at 9:00 A.M. and ended at 10:00 A.M. Windrow temperature was 261°F with a laydown temperature of 246°F and a loose laydown lift thickness of 2.5 inches throughout the section.

PASSING LANE: Paving of the trench replacement began September 10 with a tack coat applied prior to paving. The mean windrow temperature was 267°F with a laydown temperature of 264°F and loose laydown thickness of 3.5 inches at station 0+00 and 2.75 inches at stations 5+00 and 2+50.

The top lift was started on September 12 with a tack coat applied prior to paving. Paving began at 4:00 P.M. and ended at 4:20 P.M. Windrow temperature was 273°F with a laydown temperature of 258°F and a loose laydown depth of 2.5 inches throughout the section. Due to the contractors operations, compacted lift thicknesses were not taken.

Section 300510 5 INCH POLYBUILT MODIFIER

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

DRIVING LANE: September 11, paving of the bottom lift began after a tack coat was applied. Paving started at 4:00 P.M. and ended at 4:30 P.M. The aggregate looked well covered and the mix looked good. The windrow temperature was 298°F with a laydown temperature of 273°F and a loose laydown thickness of 2.5 inches in depth throughout the section.

The top lift was paved on September 12 with a tack coat applied before paving. Paving of the SHRP lane started at 10:45 A.M. and ended at 11:30 A.M. The windrow temperature was 299°F with a laydown temperature of 277°F and a loose laydown depth of 3.25 inches at station 0+00 and 3.5 inches at stations 5+00 and 2+50. Due to the contractors operation, compacted lift thicknesses were not taken.

For both top and bottom lifts of the Polybuilt, the paver moved much slower than in the paving of the SHRP sections.

PASSING LANE: Paving of the bottom lift began on September 11 with a tack coat applied prior to paving. The paving started at 3:00 P.M. and ended at 3:20 P.M. The windrow temperature was 288°F with a mean laydown temperature of 268°F and a loose laydown depth of 2.5 inches throughout the section. Due to the contractors operation, compacted lift thicknesses were not taken.

No measurements or temperatures were taken from the top lift of the passing lane.

Section 300511 5 INCH KRATON MODIFIER

September 3, 1991 the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

DRIVING LANE: Paving of the bottom lift started September 11 with a tack coat applied prior to paving. Paving began at 4:00 P.M. and ended at 4:30 P.M. The aggregate was well coated and the mixture looked good. The windrow temperature was 283°F with a laydown temperature of 255°F and a loose laydown thickness between 2.5 inches at station 2+50 and 3.0 inches at station 5+00.

The top lift was paved on September 12 with a tack coat applied before paving. Paving started at 11:30 A.M. and ended at 12:15 P.M. The windrow temperature was 280°F with a laydown temperature of 261°F and a loose laydown depth of 3.75 inches throughout the section. Due to the contractors operation, compacted lift thicknesses were not taken.

For both top and bottom lifts, the paver moved much slower than in the paving of the SHRP lanes.

PASSING LANE: Paving of the bottom lift started September 11 with a tack coat applied prior to paving. The paving started at 3:30 P.M. and ended at 4:00 P.M. The windrow temperature was 287°F with a laydown temperature of 269°F and a loose laydown depth varying from 2.5

inches at stations 0+00 and 2+50 to 3.0 inches at station 5+00. Due to the contractors operation, compacted lift thicknesses were not taken.

No measurements or temperatures were taken from the top lift of the passing lane.

APPENDIX A

SHRP REGION:	WESTERN
STATE: <u>Yorkins</u>	
SHRP SECTION ID NUM	BER: 300500 ViRgin MIX
EXPERIMENT NAME: _	SP55
HIGHWAY NUMBER: _	I 90 Westhmod
DATE OF FIELD MATER SAMPLING AND FIELD	RIAL TESTING: Sept 12, 1991
SUBMITTING CONTRAC	CTOR: NICHOLS CONSULTING ENGINEERS
TOTAL SHEETS:	<u>4</u>

LTPP-SPS MATERIAL SAMPLING AS SAMPLING UNCOMPACTED BITUMINOUS SAMPLING DATA SHEET 1	S PAVING MIXTURES	sheet number <u>a</u> of <u>4</u>	
HRP REGION <u>WESTERS</u> SPS EXPERIMENT NUMBER <u>5</u> ROUTE/HIGHWAY <u>Z-90</u> Lan	STATE MONTANA e OR Direction WB	STATE CODE SPS PROJECT CODE TEST SECTION NO. FIELD SET NO.	
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NAME Jim 5/EVENSON	EMPLOYER Montana	151	
TITLE MAKRIALS EN	<u> </u>		
MIK PLANT			
PLANT NAME Empire	Construction	ecify) 3 [<u>Z</u>]	
PLANT LOCATION	Timber		
PLANT TYPE Batch 1	Drum 2 Other (Sp	ecify) 3 [<u>Z</u>]	
DESCRIPTION OF MIX PLANT			
MANUFACTURER OF ASPHALT PLANT	Boeing		
MODEL NUMBER	COAL FRED		
BATCH SIZE			
Roadway Prior to Compaction Other 6 (specify) MIX TYPE "Virgin" Asphalt Con		alt Concrete 2 []	
LAYER TYPE		[<u>4</u>]	
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SAMPLE TYPE DESIGNATION .			ĺ
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DATE SHIPPED (Month-Day-Year)		<u>-9-17-91</u>	
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SHRP Sections 3	200506, 300507		
CERTIFIED	VERIFIED AND APPROVED		
Field Crew Chief	SHRP Representative/ Affiliation: FHA/SHRP	Month- Day- Yea	Ξ
Affiliation:	5++iliation: 50:4 /5 MM//		

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LTPP-SPS MATERIAL SAMPLING AND FIELD TESTING

SHEET NUMBER 3 OF 4

sheet number 4 of 4LTPP-SPS MATERIAL SAMPLING AND FIELD TESTING SUMMARY OF MATERIAL SAMPLES SENT TO EACH LABORATORY FIELD OPERATIONS INFORMATION FORM 2 HRP REGION WESTERN STATE MONTANA STATE CODE SPS EXPERIMENT NO 5

ROUTE/HIGHWAY 7-90 Lane DR Direction NB TEST SECTION NO.

SAMPLE/TEST LOCATION:

Before Section

After Section FIELD SET NO. LABORATORY WORK COMPLETED ON <u>O9-12-91</u> NOTE: This is a summary of material samples sent to each laboratory based on the information from Field Operations Information Form 1. Complete one form for each laboratory that material samples were sent. LAYER NO. (From Subgrade) MATERIAL/SAMPLE TYPE TOTAL NUMBER OF SAMPLES 4" Diameter ____ 6" Diameter ____ 12" Diameter ___ AC CORES: AC Cores with Bound Base/Subbase AC Cores with PCC AC Cores with PCC and Bound Base/Subbase PCC Cores with Bound Base/Subbase AC MIK BULK SAMPLES: Fifty Pound Samples - Witten Recycled 4" Diameter ____ 6" Diameter____ PCC CORES: PCC BEAMS: BOUND BASE CORES: 4" Diameter____ UNBOUND BASE SAMPLES: (a) BAGS (BULK)_____ (b) JARS (MOISTURE)____ BOUND SUBBASE CORES: 4" Diameter UNBOUND SUBBASE SAMPLES:(a) BAGS (BULK)_____ (b) JARS (MOISTURE)____ (a) BAGS (BULK) (b) JARS (MOISTURE) (c) THIN-WALLED TUBES (d) SPLITSPOON JARS 1 SUBGRADE SAMPLES: GENERAL REMARKS:

	- In /W/ / XETION OF
Field Crew Chief	SARP Representative
Affiliation:	Affiliation: FHW /SHRP
	

CERTIFIED

VERIFIED AND APPROVED

DATE

/ - 23 -19 92 Month- Day- Year

SHRP REGION: WESTERN
STATE: Montania
SHRP SECTION ID NUMBER: 300500 Revele
EXPERIMENT NAME: 585-5
HIGHWAY NUMBER: <u>T-90 West Round</u>
DATE OF FIELD MATERIAL SAMPLING AND FIELD TESTING: Sept. 11,1991
SUBMITTING CONTRACTOR: NICHOLS CONSULTING ENGINEERS
TOTAL SHEETS: 4

	Replacement	Binder Course 3 [9 <u>L</u> 1
Rut Level-Up 1 Mill Surface Course 4 Surfa SAMPLE TYPE DESIGNATION SAMPLE NUMBER APPROXIMATE SAMPLE SIZE (lbs) DATE SAMPLED (Month - Day - Ye LOCATION SAMPLE SHIPPED TO DATE SHIPPED (Month-Day-Year) GENERAL REMARKS: 4 5 94/10	Replacement	Binder Course 3 [[(4) (4) (9) (9) (9)
Rut Level-Up 1 Mill Surface Course 4 Surfa SAMPLE TYPE DESIGNATION SAMPLE NUMBER APPROXIMATE SAMPLE SIZE (lbs) DATE SAMPLED (Month - Day - Ye LOCATION SAMPLE SHIPPED TO DATE SHIPPED (Month-Day-Year) GENERAL REMARKS: 4 5 94/10	Replacement	Binder Course 3 [[(4) (4) (9) (9) (9)
LAYER TYPE Rut Level-Up 1 Mill: Surface Course 4 Surfa SAMPLE TYPE DESIGNATION SAMPLE NUMBER APPROXIMATE SAMPLE SIZE (lbs) DATE SAMPLED (Month - Day - Ye LOCATION SAMPLE SHIPPED TO DATE SHIPPED (Month-Day-Year)	Replacement	Binder Course 3 [[(4) (4) (9) (9) (9) (1)
LAYER TYPE Rut Level-Up 1 Mill Surface Course 4 Surfa SAMPLE TYPE DESIGNATION SAMPLE NUMBER APPROXIMATE SAMPLE SIZE (lbs) DATE SAMPLED (Month - Day - Ye LOCATION SAMPLE SHIPPED TO	Replacement	Binder Course 3 [[(4) (4) (1) (0) (0) (9) (1)
LAYER TYPE Rut Level-Up 1 Mill Surface Course 4 Surfa SAMPLE TYPE DESIGNATION SAMPLE NUMBER APPROXIMATE SAMPLE SIZE (lbs) DATE SAMPLED (Month - Day - Ye	Replacement	Binder Course 3 [[(4) (4) (1) (0) (0) (9) (1)
LAYER TYPE Rut Level-Up 1 Mill: Surface Course 4 Surfa SAMPLE TYPE DESIGNATION SAMPLE NUMBER APPROXIMATE SAMPLE SIZE (lbs)	Replacement	Binder Course 3 [[4]
LAYER TYPE Rut Level-Up 1 Mill: Surface Course 4 Surfa SAMPLE TYPE DESIGNATION SAMPLE NUMBER	Replacement 2	Binder Course 3	[<u>4</u>]
LAYER TYPE Rut Level-Up 1 Mill: Surface Course 4 Surfa SAMPLE TYPE DESIGNATION	Replacement 2	•	
LAYER TYPE Rut Level-Up 1 Mill : Surface Course 4 Surfa	Replacement 2	•	
LAYER TYPE Rut Level-Up 1 Mill	Replacement 2	•	
-	ncrete 1 Recycled Asy	phalt Concrete 2	
MIX TYPE "Virgin" Asphalt Con	ncrete 1 Recycled Asy	phalt Concrete 2	
Conveyor Belt 1 Stock Roadway Prior to Compaction Other 6 (specify)	5 Station <u>2</u> + <u>5</u> 0	3 Funnel Device) Offset / (feet from 0/	4 ′S)
SAMPLING LOCATION			[<u>5</u>]
	· · · · · · · · · · · · · · · · · · ·		
BATCH SIZE	A M I LA GU		
MODEL NUMBER 400 (10		
MANUFACTURER OF ASPHALT PLANT	Baoina		
DESCRIPTION OF MIX PLANT	, prum z Ocher	(opecity)	(<u> </u>
PLANT TYPE Batch 1	Drum 2 Other	(Snecify) 3	<u> </u>
PLANT NAME EMPIRE PLANT LOCATION B/O	TO-LOR		
MIX PLANT	C- 4011.13-1		
TITLE MO HERIAL EN	<u> </u>		
NAME J'm Stevenson			
PERSON PERFORMING SAMPLING	M- L.	na not	
	e <u>UR</u> Direction WB	FIELD SET NO.	<u> </u>
ROUTE/HIGHWAI Land	o DO Direction WB	STATE CODE SPS PROJECT CODE TEST SECTION NO.	300
SPS EXPERIMENT NUMBER 5 ROUTE/HIGHWAY I-90 Land	STATE // On-PAI/A		7 -
THEP REGION WESTERA)		emumo dono	
LTPP-SPS MATERIAL SAMPLING AND SAMPLING UNCOMPACTED BITUMINOUS SAMPLING DATA SHEET 10 HRP REGION WESTERN NUMBER 5 ROUTE/HIGHWAY 7-90 Land	S PAVING HIXTURES 0	SHEET NUMBER _A_ OF	70-

LTPP-SPS MATERIAL SAMPLING AND FIELD TESTING LABORATORY SHIPMENT SAMPLES INVENTORY FIELD OPERATIONS INFORMATION FORM 1						sheet number 3 of 4			
SDC EN	ZDEDIMENT NA	<u>-90</u> L ION: 🛭 Be	ane <u>OR</u> fore Sectio	Direction Direction After OF SECTION		STATE CODE SPS PROJECT CO TEST SECTION N FIELD SET NO.	DDE NO.	시	
	ING AREA No:		_		FIELD WORK C		29 - <u>18</u>	•	
summa	Use a separa ry informati sheets with	on (Field O	perations I	information F	e additional orm 2) and "	sheets if neces as actual" samp	ssary. In oling loo	nclude cation	
	SAMPLE LOCATION 300500	SAMPLE NUMBER	SAMPLE SIZE 10016	SAMPLE TYPE RAP	SAMPLE MATERIAL	SAMPLE CONDITION	LAB*		
* Ente	er number of	laboratory	, as speci	fied below,	each sample	was sent to:			
	Lab No.(2)			· · · · · · · · · · · · · · · · · · ·					
GENER	AL REMARKS:_								
CERTI				FIED AND APP	emura	Mo	DATE <u>/ - 23</u> nth- Day	-19 <u>9</u>	
	Crew Chief iation:		SH&RP Affi	Representat	HRP/FHLA	7	c.i- Day	, rear	

	OF MATERIAL SAMPLES SENT IELD OPERATIONS INFORMAT			
SPS EXPEROUTE/HI	RIMENT NO <u>5</u> GHWAY Z-90 Lane	STATE <u>Non/fan/A</u> <u>OR</u> Direction WB Section D After Section	SPS PROJECT TEST SECTION	CODE <u>05</u>
LABORATO	RY	*	WORK COMPLETED ON	109-12-91
from Fie samples	ld Operations Information were sent.	ial samples sent to each lab n Form 1. Complete one form		
LAYER N (From Su	O. bgrade) MATERIAL/SA	MPLE TYPE	TOTAL NUMBE	R OF SAMPLES
	AC CORES:	4" Diameter 6" Dia AC Cores with Bound Base/ AC Cores with PCC AC Cores with PCC and Bou	Subbase	Diameter
X	AC MIX BULK SAMPLES:			
	PCC BEAMS:	4" Diameter 6" D	iameter	
	BOUND BASE CORES:	4" Diameter		
	UNBOUND BASE SAMPLES:	(a) BAGS (BULK)(b)	JARS (MOISTURE)_	
	BOUND SUBBASE CORES:	4" Diameter		
	UNBOUND SUBBASE SAMPLES	:(a) BAGS (BULK)(b)	JARS (MOISTURE)_	
1	SUBGRADE SAMPLES:	(a) BAGS (BULK) (b) (c) THIN-WALLED TUBES	JARS (MOISTURE)(d) SPLITSPOON	JARS
GENERAL	REMARKS:			
CERTIFIE	ED .	VERIFIED AND APPROVED	<u> </u>	DATE
	rew Chief	SHEP Representative Affiliation: SAPP/F	Hha	

LTPP-SPS MATERIAL SAMPLING AND FIELD TESTING

SHEET NUMBER 4 OF 4

LTPP-SPS CONSTRUCTION DATA REFERENCE PROJECT STATION TABLE CONSTRUCTION DATA SHEET 1

* STATE CODE * SPS PROJECT CODE [30] [2 5]

* TEST SECTION NO.

 $[\underline{0} \ \underline{0}]$

1 3 0 0 5 0 5 0 6	ORDER	TEST SECTION ID NO	REFERENCE PROJE	CCT STATION NUMBER	(4)CUT-FILL ¹
2 3 0 0 5 0 6	OIL III		(2) START	(3) END	TYPE STATION
3	1	300505	0 + 0 0	5+00	2 _+
4	2	300506	e+aa	/_+_0_a	2 _+
5 3 0 0 5 0 3 _ 3 4 + 9 8 _ 3 9 + 9 8 _ + _ 6 3 0 0 5 0 8 _ 3 0 + 9 8 _ 3 5 + 9 8 _ + _ 7 3 0 0 5 0 9 _ 3 6 + 9 8 _ 4 1 + 9 8 _ + _ 8 3 0 0 5 0 8 _ 4 2 + 9 8 _ 4 7 + 9 8 _ + _ 9 3 0 0 5 1 0 _ 4 3 + 9 8 _ 5 3 + 9 8 _ + _ 10 3 0 0 5 1 1 _ 5 4 + 9 9 _ 5 9 + 9 9 _ + _ 11	3	300507	1&+ <u></u> 0	17+00	2 _+
6 3 0 0 5 0 8	4	300504	18+00	23+00	2 _+
7 300509 36+98 41+98	5	300503	34+98	20+98	2+
8 3 0 0 5 0 8 - 4 2 + 9 8 - 4 7 + 9 8 - + - 9 3 0 0 5 1 0 - 4 3 + 9 8 - 5 3 + 9 8 - + - 10 3 0 0 5 1 1 - 5 4 + 9 9 - 5 9 + 9 9 - + - 11 + + + + + - + - 12 + + +	6	300508	30+98	35+98	2 _+
9	7	300509	36+98	41+98	<u>z</u> +
10 3 o o 5 1 1 5 4 + 9 9 5 9 + 9 9 2 -+ - 11	8	30050a	43+98	47+ <u>9</u> 8	<u> </u>
11 ————————————————————————————————————	9	300510	43+98	53+98	2 _+
12 ————————————————————————————————————	10	300511	54+99	59+99	2 _+
13 ————————————————————————————————————	11		+_		+
14 ————————————————————————————————————	12			+	_ _+
15	13	-	+	+	_ _+
16	14		+	+	_+
17	15		+_		+
18	16		+	+	+
	17		_ _ +	+	- - +
10	18		_ _ +	+_	_ _+
¹⁷ + + + - -+-	19			+_	+
20	20		+	<u> </u>	_ _+

G	PS sec	tion	EST SECTI		_ is the	same as	SPS	section section	 	
6.	INTER ROUTE		s between	TEST		ON THE				

Note 1. Indicate the type of subgrade section the test section is located on:

Cut....... 1 Fill....... 2 At-Grade....... 3 Cut and Fill....... 4

If cut-fill transition is located in a test section, enter test section station of the cut-fill transition location.

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2

* STATE CODE

* SPS PROJECT CODE * TEST SECTION NO.

[<u>3 o</u>] [<u>0</u> <u>5</u>] [0 d]

1.LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE	4. LAYER THI		(NESSES (Inches)		
NUMBER	DESCRIPTION	CLASS	AVERAGE	MINIMUM	MUMIXAM	STD. DEV.	
1	SUBGRADE(7)	[Ea]	didipation (Sec.	Jacob () (\$10.25)	8.80.000		
2	[0]	[E &]	1_13.41			·-	
3	[<u>0</u> <u>5</u>]	(प्रका	[<u>a</u> .75]		'-		
4	[<u>0</u> <u>3</u>]	[01]	[5.75]			· -	
5	[22]	(ठ द)	[0.0]				
6	[<u>o</u> a]	[8 6]	[0.]]				
7	(OT)	[<u>/</u> 3]	[_2.0]				
8	[]	[]	[]				
9	[]	[]	[]				
10	[]	[]	[]				
11	[]	[]	[1				
12	[]	[]	[]			·-	
13	[]	[]	[]				
14	[]	[]	[]				
15	[1	[]	[]				

NOTES:

Layer 1 is subgrade soil, the highest numbered layer is the pavement surface. 1.

Layer description codes: 2.

Overlay......01 Base Layer....05
Seal/Tack Coat.....02 Subbase Layer....06 Porous Friction Course..09 Surface Treatment.....10 Original Surface......03 Subgrade.......07
HMAC Layer (Subsurface).04 Interlayer......08 Embankment (Fill).....11

If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.

- Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 3. which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.
- 4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER Kemines EMPLOYER SHRP/FHWA DATE 11-5-91

NO SKETCH

LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3

* STATE CODE

* SPS PROJECT CODE

* TEST SECTION NO.

PREPARER Kemunes

EMPLOYER SURP FHUA

DATE 11/5/91

	NO PA	tching
	LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [08]
1.	DATE PATCHING OPERATIONS BEGAN (Month-Day-Year)	[]
2.	DATE PATCHING OPERATIONS COMPLETED	[]
3.	PRIMARY DISTRESS OCCURRENCE PATCHED (code from Other (Specify)	
4.	SECONDARY DISTRESS OCCURRENCE PATCHED (code fro	· · · · · · · · · · · · · · · · · · ·
5.	SUMMARY OF PATCHING NUMBER Surface Only [] Surface and partial base replacement [] Full depth []	TOTAL AREA (SQ. FT.) [] []
6.	METHOD USED TO DETERMINE LOCATION AND SIZES OF Deflection 1 Coring 2 Visual Other 4 (specify)	3
7.	METHOD USED TO FORM PATCH BOUNDARIES None 1 Saw Cut 2 Air Hammer Other 5 (Specify)	[] 3
8.	COMPACTION EQUIPMENT None	Truck Tire 6
9.	PATCH MATERIAL Hot Mix Asphalt Concrete 1 Plant Mix with Plant Mix with Emulsified Asphalt, Cold Laid. Road Mix with Emulsified Asphalt	3 Road Mix with Cutback Asphalt. 5 Portland Cement Concrete
10.	MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENIN	G TO TRAFFIC (Hrs) [
11.	MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENI	NG (if used) (°F) [
12.	AIR TEMPERATURE DURING PLACEMENT OPERATIONS High Temperature (°F) Low Temperature (°F)	[
13.	PREDOMINATE ROAD SURFACE MOISTURE CONDITION DU Dry 1 Moist 2 Wet	
ם ממ	DARER CHANGE FMPIOVER - UPO /	1 =41.4 DATE 11/2/01

	NO	Level-4p
	LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [03]
1.	DATE LEVEL-UP LAYER APPLIED	[]
2.	PLACEMENT LOCATION OF LEVEL-UP LAYER Outside Rut 1 Inside Rut 2 Both Ruts	3 Full Lane Width 4
3.	LENGTH OF TEST SECTION COVERED Full Length of Test Section 1 Partial Length of Test Section 2 (enter st Outside Wheel Path Rut: Start Station + Inside Wheel Path Rut: Start Station +	[] Eart and end station numbers) End Station + End Station +
4.	AVERAGE RUT DIMENSIONS (Inches) Outside Wheel Path Ru Inside Wheel Path Ru	
5.	RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-UNOne 1 Broomed 2 Broomed + A Asphaltic Tack Coat (only) 4 Wheel Path Milling 5 (specify, inch Other 6 (Specify)	Asphaltic Tack Coat 3
6.	COMPACTION EQUIPMENT None	ilder ille
7.	TYPE OF LEVEL-UP MATERIAL Hot Mix Asphalt Concrete 1 Plant Mix with Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Emulsified Asphalt	Road Mix with Cutback Asphalt. 4
8.	MAXIMUM TOP SIZE AGGREGATE (Inches)	[]
9.	MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING	G TO TRAFFIC (Hrs)
10.	MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENIS	NG (if used) (•F) []
11.	AIR TEMPERATURE DURING PLACEMENT OPERATIONS High Temperature (°F) Low Temperature (°F)	[]
12.	PREDOMINATE ROAD SURFACE MOISTURE CONDITION DU Dry 1 Moist 2 Wet	
	·	

PREPARER Klemunes EMPLOYER SHRP/FHnon DATE 11-5-91

	OPEN GR	_	e My Kodowa	0c:	tober 1990
LTPP-SPS CONSTRU PREPARATION OF MILLE CONSTRUCTION DA	D TEST SECTIONS	* STATE C * SPS PRO * TEST SE	JECT CODE	[30] [05] [0a]	
. DATE OF MILLING OPERA	TION		_	(Q9-D	13-9 11
2. MANUFACTURER OF MILLI	ING MACHINE (Spec	ify)	<u> </u>	7 <u> T </u>	
3. MILLING MACHINE MODEI	_ DESIGNATION (Sp	pecify)		0	
4. WIDTH OF CUTTING HEAD	(Inches)				[150]
5. TOTAL MILLED DEPTH (Inches)			·	
Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge	<u> </u>				[96]
Outside lane edge	— —·				[96]
 Estimate of exter Height of Ridge I Other Comments? Comments 	Between Parallel (Yes, No)			nated (Percen	(at) [0]
O. WHERE PATCHES PLACE				,	[_1/0_]
11. LENGTH OF TIME MILL 12. WAS MILL REPLACEMEN 13. LAYER NUMBER OF MIL 14. NOMINAL THICKNESS O	T LAYER THICKER L REPLACEMENT	THAN MILL D	EPTH (YES,N	•	[_46 [
15. TYPE OF MILL REPLAC "Virgin" Asphalt Co Other 3 (Specify	ncrete 1	Recycled A			(<u>a</u>
16. WAS ADJACENT TRAVEL IF NO, WIDTH MILLED	LANE MILLED TO SAME DEPTH AS T	SAME DEPTH EST LANE (F	AS TEST LAN 'eet)	E? (Yes, No)	{
17. COMMENTS	· · · · · · · · · · · · · · · · · · ·				
		`			
PREPARER Stemune	EMPLOY	er <i>5489</i> /	EHWA_	DATE/_	5-9/

	LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [0 a]					
1.	SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLA None 1 Broomed 2 Broomed + As Asphaltic Tack Coat (only) 4	(2-/- 1					
2.	TACK COAT Layer Numbers Material Type None 1 SS-1 2 SS-1H CRS-2 5 CMS-2 6 CMS-2H 7 CSS-1 Other 10 (Specify)						
	TACK COAT DILUTION (Percent) Mixing Rate Parts Diluent TO Parts Asphalt						
4,	TACK COAT APPLICATION RATE (Gal/Sq. Yd.)	$(\mathcal{Q}, \cancel{+})$					
5.		ce (Mi) Time (Min) Layer Numbers [
6.	MANUFACTURER OF ASPHALT CONCRETE PAVER	Blaun-Knox					
7.	MODEL DESIGNATION OF ASPHALT CONCRETE PAVER	220 /97/					
8.	SINGLE PASS LAYDOWN WIDTH (Feet)	[<u>a</u> a.0]					
9.	AC BINDER COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inche Nominal Second Lift Placement Thickness (Inche						
10.	AC SURFACE COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inche	s) []					
11.	Nominal Second Lift Placement Thickness (Inch SURFACE FRICTION COURSE Layer Number Nominal Placement Thickness (Inches)						
12.	TEST SECTION STATION OF TRANSVERSE JOINTS (with Binder Course Surface Course Surface Friction Course	in test section) [+] [_ +] [_ +]					
13.	LOCATION OF LONGITUDINAL SURFACE JOINT Between lanes 1 Within lane 2 (specify of	[]					
14,	SIGNIFICANT EVENTS DURING CONSTRUCTION(disrupti	ons, rain, equip. problems, etc.)					
PR:	eparer Kemunes employer 5489	FHLA DATE 11-5-91					

	70	PP-SPS CONSTRUCTIO VERLAY COMPACTION NSTRUCTION DATA SH	DATA		* STATE CO * SPS PROJ * TEST SEC	ECT CODE	300 249	
1.	DATE PA	AVING OPERATIONS E	BEGAN (Month-I	Day-Year)	<u> </u>	<u> </u>]
3.	TAVER MIMBER							
4.	MIXING	TEMPERATURE (*F)					8c€ [<u>7</u>]	
5.		N TEMPERATURES (*F	• • •				[중 2 5.]
	Mear Mini	n imum ndard Deviation	242	Numb Maxi	er of Tests	5	. <u>a 50</u>	
	Roller Code #		Gross Wt Ti		Frequency (Vibr./Min)	Amplitude (Inches)		
66 77 8 9 100 111 122 133 144 155 166 177 188 19 200 21	B C D E F G H I J K L M N O P	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Other						Both 2.5mph-vs 3.5mph-si
	COMPACT	ION DATA	First Lift	Second Li	ft Third	Lift Fou	rth Lift	
23 24	Coverag	Code (A-Q) es	VIBR STAT M _ Q.	. —				
25 26	INTERME Roller Coverage	Code (A-Q)						
27 28	FINAL Roller (Coverage	Code (A-Q) es	IVIBE ISTAT N _ Q.	_				
30	Compacte	perature (*F) ed Thickness (In) Period (Days)				· _ ·		
PRE	PREPARER SIGNARES EMPLOYER SIGNA DATE 11-5-91							

LTPP-SPS CONSTRUCTION DATA
CONSTRUCTION QUALITY CONTROL MEASUREMENTS
CONSTRUCTION DATA SHEET 9

* STATE CODE

* SPS PROJECT CODE * TEST SECTION NO. [0 5]

1. NUCLEAR DENSITY MEASUREMENTS

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C) ¹			· <u>—</u>	A	
Rod Depth (Inches)		:		00	
Number of Measurements				02	
Average (pcf)	. — — — · —			147.9	
Maximum (pcf)				198.9	
Minimum (pcf)				146.8	
Standard Deviation (pcf)					
Layer Number				07	

	¹ Measurement Method Backscatter A Direct Transmission	B Air Gap C
2.	MANUFACURER OF NUCLEAR DENSITY GAUGE	eox/eR
3.	NUCLEAR DENSITY GAUGE MODEL NUMBER	3440
4,	NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER	6505
5.	NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION	3556_
6.	PROFILOGRAPH MEASUREMENTS	
	Profilograph Type California 1 Rainhart 2 Profile Index (Inches/Mile) Interpretation Method Manual 1 Mechanical 2 Computer Height of Blanking Band (Inches) Cutoff Height (Inches)	3
7.	. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES. NO)	λC

PREPARER Klemunes

EMPLOYER SARP FHWA

DATE <u>//-5-9/</u>

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10

- * STATE CODE
- * SPS PROJECT CODE
- * TEST SECTION NO.

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET \bot of \bigcirc

						- "-
STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
Q+00					. । । । । अव-भवव ज्ञान्त्र	:- :-
Q+5 Q	- 137 - 37 - 14 - 45 - 45		:-	: : :		:
L+00	- 기 시 시 시 시 시 시 시 시 시 시 시 시 시 시 시 시 시 시	:- :-	:- :-		5 49 5 4	:_
1+50	- 373 - 374 - 45 - 45	:_ :_	:-			
<u>a+0</u> 0	- 39 - 39 - 39 - 39 - 39 - 39 - 39 - 39	:_ :_	:-			
8+2 O	- 사람 - 사람 - 사람 - 사람	== :=			ज्यातृत्वा अक्षव्यव । । । । । । । ।	
3+O D	- 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3		:- :-			:-
LAYER NUMBI	ER				97	

PREPARER John Klemures EMPLOYER SHAP FALLA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10

* STATE CODE

* SPS PROJECT CODE * TEST SECTION NO.

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 2 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+5 ○	- 35 - 75 - 74 - 4				<u>୍</u>	
4+00	- 377 - 77 - 4 B		: : :		 	
4+50	- 1374 - 775 - 775	· · ·				: :
Q Q+2	이이어 작건시5 이어어	:- :-				: :
+		: :_				:
+						
+						· · ·
LAYER NUMBE	ER				07	

PREPARER John Klemmes EMPLOYER SHAP FHLAM DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE * SPS PROJECT CODE * TEST SECTION NO.	(3 (0 5 (3)
Provide any miscellanious comments and notes conce	ring construction opera	tions which

Provide any miscellanious comments and notes concering construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indicatetion of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

Rod & level	SURREYS	here con	peted	b-fores	and AFTER
Rod & level	mess.	ula mante	1.0.00 M	aken ho	topped Lists
12M HILLS - PORY & PIRC			- V-C //	<u>,,, – ,, </u>	
					
<u></u>			··		
		·			
		<u></u>			
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			<u> </u>	· · · · · · · · · · · · · · · · · · ·	
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<u> </u>		····	<u> </u>		
					
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	<u> </u>	•			
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EMPLOYER SHEP/FHA DATE 1-14-90

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2 * STATE CODE

* SPS PROJECT CODE

[<u>3 0</u>] [<u>0</u> 5]

* TEST SECTION NO.

[03]

1.LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE	4. 1	AYER THICK	(NESSES (In	ches)
NOTIBER	DESCRIPTION	CLASS	AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[<u>6</u> <u>a</u>]	Anthropally Comme	eric St. Albert Albert.		
2	[<u>ひ</u> €]	(ह द्री	[_ 14.5]			
3	[0.5]	[च क]	[4.a5]			
4	[03]	ا لا عا	[5.75]		- '-	
5	[5 5]	[ठ छ]	[0.0]	' -		
6	[0 g]	[8 ह]	[-0.1]			
7	[O T]	1731	[_a.o]			
8	(ठ दी)	ष्टिं	[a.]]			
9	[0 1]	[13]	[_3.0]			
10	[]	[]	[]	- ·-		
11	[]	[]	[]		·-	
12	[]	[]	[]			
13	[]	[]	[]		·-	
14	[]	[]	(1	·-		
15	[]	[]	[]			·-

NOTES:

Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.

Layer description codes:

Porous Friction Course..09 Seal/Tack Coat......02 Subbase Layer....06 Surface Treatment.....10 Original Surface......03 Subgrade......07 Embankment (Fill).....11 HMAC Layer (Subsurface).04 Interlayer......08

If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.

Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 3. which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.

Enter the average thickness of each layer and the maximum, minimum, and standard 4. deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER Kemunes EMPLOYER 54RP/FHWA DATE 11/5/91

NO picture

LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3

* STATE CODE * SPS PROJECT CODE

* TEST SECTION NO.

	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	patches
	LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE [3 0]  * SPS PROJECT CODE [0 5]  * TEST SECTION NO. [0 3]
L.	DATE PATCHING OPERATIONS BEGAN (Month-Day-Year)	) []
2.	DATE PATCHING OPERATIONS COMPLETED	[]
	PRIMARY DISTRESS OCCURRENCE PATCHED (code from Other (Specify)	· · · · · · · · · · · · · · · · · · ·
	SECONDARY DISTRESS OCCURRENCE PATCHED (code fr Other (Specify)	
	SUMMARY OF PATCHING NUMBER Surface Only [] Surface and partial base replacement [] Full depth []	TOTAL AREA (SQ. FT.) [] []
6.	METHOD USED TO DETERMINE LOCATION AND SIZES OF Deflection 1 Coring 2 Visual Other 4 (specify)	3
7.	METHOD USED TO FORM PATCH BOUNDARIES  None 1 Saw Cut 2 Air Hammer  Other 5 (Specify)	3 Cold Milling 4
8.	COMPACTION EQUIPMENT None	Truck Tire
9.	PATCH MATERIAL  Hot Mix Asphalt Concrete 1 Plant Mix with  Plant Mix with Emulsified Asphalt, Cold Laid.  Road Mix with Emulsified Asphalt  Other 7 (Specify)	3 Road Mix with Cutback Asphalt. 4 5 Portland Cement Concrete 6
10.	MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENIN	NG TO TRAFFIC (Hrs) []
11.	MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPEN	ING (if used) (°F) []
12.	AIR TEMPERATURE DURING PLACEMENT OPERATIONS High Temperature (°F) Low Temperature (°F)	[]
13.	PREDOMINATE ROAD SURFACE MOISTURE CONDITION DO Dry 1 Moist 2 Wet	
PRE	PARER Klemunes EMPLOYER SHRP/1	-HWA DATE _//-5-91

NO LEVEL-40 * STATE CODE LTPP-SPS CONSTRUCTION DATA [20] * SPS PROJECT CODE RUT LEVEL-UP TREATMENT [<u>かち</u>] CONSTRUCTION DATA SHEET 5 * TEST SECTION NO. [0,3] DATE LEVEL-UP LAYER APPLIED [__ _-_ __] 2. PLACEMENT LOCATION OF LEVEL-UP LAYER Outside Rut.... 1 Inside Rut.... 2 Both Ruts.... 3 Full Lane Width... 4 3. LENGTH OF TEST SECTION COVERED  $[_]$ Full Length of Test Section ..... 1 Partial Length of Test Section .... 2 (enter start and end station numbers) Outside Wheel Path Rut: Start Station _ + _ _ End Station _ + _ _ _ Inside Wheel Path Rut: Start Station _ + _ _ End Station _ + _ _ _ 4. AVERAGE RUT DIMENSIONS (Inches) Outside Wheel Path Rut Inside Wheel Path Rut RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-UP None...... 1 Broomed....... 2 Broomed + Asphaltic Tack Coat.... 3 Asphaltic Tack Coat (only).... 4 Wheel Path Milling...... 5 (specify, inches) DEPTH __._ WIDTH __._ Other..... 6 (Specify) 6. COMPACTION EQUIPMENT None ........... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire...... 6 Hand Tools..... 7 Other...... 8 (Specify)_____ 7. TYPE OF LEVEL-UP MATERIAL Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2 Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4 Road Mix with Emulsified Asphalt...... 5 Other... 6 (Specify) 8. MAXIMUM TOP SIZE AGGREGATE (Inches) [__.__] [___] 9. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) 10. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (of) [__ __] 11. AIR TEMPERATURE DURING PLACEMENT OPERATIONS High Temperature (.F) Low Temperature (°F) 12. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__] Dry...... 1 Moist...... 2 Wet...... 3

PREPARER Klemunes EMPLOYER SHRP FHWA DATE 11/5/91

	OPEN GRADE	0 /2	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	<u> </u>				
LTPP-SPS CONSTRU PREPARATION OF MILLE CONSTRUCTION DA	* STATE CODE [3 0]  * SPS PROJECT CODE [0 5]  * TEST SECTION NO. [0 3]							
1. DATE OF MILLING OPERA	ATION			[ <u>0</u> 9- <u>0</u>	3-21			
2. MANUFACTURER OF MILLI	<u>CMT</u>							
3. MILLING MACHINE MODEI	DESIGNATION (SI	pecify) _	100	0				
4. WIDTH OF CUTTING HEAD	(Inches)				11501			
5. TOTAL MILLED DEPTH (	[nches]							
Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average			
Inside lane edge			·		[96]			
Outside lane edge					[96]			
MILLED SURFACE CHARACTERISTICS  6. Macro Texture Fine Macro Texture (≤¼ inch) 1 Coarse Macro Texture(>¼ inch) 2  7. Estimate of extent of test section surface area delaminated (Percent) [								
8. Height of Ridge	Between Parallel	Passes? (In	nches)		[ <u>@</u> ]			
9. Other Comments? Comments			<del>, , , , , , , , , , , , , , , , , , , </del>	· · · · · · · · · · · · · · · · · · ·	[ <u>wo</u> ]			
10. WHERE PATCHES PLACE (If yes complete Co					[ <u>No</u> ]			
11. LENGTH OF TIME MILL 12. WAS MILL REPLACEMEN 13. LAYER NUMBER OF MIL 14. NOMINAL THICKNESS O	T LAYER THICKER ' L REPLACEMENT	THAN MILL D	EPTH (YES,N	0)	[			
15. TYPE OF MILL REPLAC "Virgin" Asphalt Co Other 3 (Specify	ncrete 1	Recycled A			[2			
16. WAS ADJACENT TRAVEL IF NO, WIDTH MILLED	LANE MILLED TO SAME DEPTH AS T	SAME DEPTH EST LANE (F	AS TEST LAN eet)	E? (Yes, No)	[ <i>]</i> 5 <u>5</u> 			
17. COMMENTS	,				- 4			
		·· <del>·</del>						
		•						
		,						
PREPARER Klemunes	EMPLOY	er <i>sarp/b</i>	FHWA_	DATE//-5	-91			

	LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [30]  * SPS PROJECT CODE [05]  * TEST SECTION NO. [03]
1.	SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLA None 1 Broomed 2 Broomed + As Asphaltic Tack Coat (only) 4	
2.	Layer Numbers Material Type None 1 SS-1 2 SS-1H CRS-2 5 CMS-2 6 CMS-2H 7 CSS-1	3 CRS-1 4 [O 6] 8 CSS-1H 9
	Other 10 (Specify)  TACK COAT DILUTION (Percent)  Mixing Rate Parts TACK COAT APPLICATION RATE (Gal/Sq. Yd.)	Diluent TO Farts Asphalt
5.	ASPHALT CONCRETE PLANT AND HAUL	e (Mi) Time (Min) Layer Numbers  [
6.	MANUFACTURER OF ASPHALT CONCRETE PAVER	Blaum-Knox
7.	MODEL DESIGNATION OF ASPHALT CONCRETE PAVER	<u>220 /97/</u>
8.		Entermedial, SURFACE [22.0]
9.	AC BINDER COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inches Nominal Second Lift Placement Thickness (Inc	
	AC SURFACE COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inche Nominal Second Lift Placement Thickness (Inche	
11.	SURFACE FRICTION COURSE  Layer Number  Nominal Placement Thickness (Inches)	[]
12.	TEST SECTION STATION OF TRANSVERSE JOINTS (with Binder Course Surface Course Surface Friction Course	in test section)  [_ +] [_ +] [_ +]
13.	LOCATION OF LONGITUDINAL SURFACE JOINT Between lanes 1 Within lane 2 (specify of	fset from O/S feet) []
14.	SIGNIFICANT EVENTS DURING CONSTRUCTION(disrupti	ons, rain, equip. problems, etc.)
PR.	EPARER KEMURES EMPLOYER HAA/S	149 DATE 11-5-91

	LTPP-SPS CONSTRUCTI OVERLAY COMPACTION CONSTRUCTION DATA S	DATA	<u> </u> *	STATE CODE SPS PROJECT CO TEST SECTION O					
1. 2.	of Bigit TOMS	BEGAN (Month-I	Day-Year)	[	9-11-91	<u></u>			
3.	LAYER NUMBER				-1	_			
4.	MIXING TEMPERATURE (*F)				[월 <b>년 2</b> ]				
5. LAYDOWN TEMPERATURES (°F)  Mean									
	Roller Roller Code # Description	Gross Wt Ti			itude   Speed ches) (mph)				
	Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired I Single-Drum Vibr Single-Drum Vibr K Single-Drum Vibr L Single-Drum Vibr Double-Drum Vibr Double-Drum Vibr Double-Drum Vibr Double-Drum Vibr	1 1 1 da				Both 2.5mph=12 3.5mph=st			
	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift	-			
23 24	BREAKDOWN Roller Code (A-Q) Coverages	IVIBR ISTAT M — Q.							
25 26	INTERMEDIATE Roller Code (A-Q) Coverages								
27 28	FINAL Roller Code (A-Q) Coverages	I VIBE I STAT N _ Q.							
30	Air Temperature (°F) Compacted Thickness (In Curing Period (Days)					-			

PREPARER Kemuns EMPLOYER SHRP/FHWA DATE 11/5/91

	0	PP-SPS CONSTRUCTION VERLAY COMPACTION NSTRUCTION DATA SH	DATA	,	STATE CODE SPS PROJEC TEST SECTI	T CODE	[30] [05] [03]	
1. 2.	DATE P	AVING OPERATIONS B	EGAN (Month-D	ay-Year)		[- <del>9</del> - /	2 9 1 2 9 1	
3.	LAYER	NUMBER			5	urfact	_	l
<b>.</b>	MIXING	TEMPERATURE (*F)				_	으로 <u>연</u> 5.1 1.1.	ı
5. ROI	Mea Min	N TEMPERATURES (°F.nimum	344	Numbe Maxim	r of Tests .			
	Roller Code #		1 4			mplitude (Inches)	Speed (mph)	
10 11 12 13 14 15 16 17 18 19 20 21	B C D E F G H I J K L M N O P	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Other						Both 2.5mph-VII 3.5mph-STA
	COMPACT	TION DATA	First Lift	Second Lif:	Third Li	£	-1. 1. 6.	
23 24	BREAKDO Roller Coverag	Code (A-Q)	IVIBR ISTAT M.		- Imira Li	rour	th Lift	
25 26	INTERME Roller Coverag	Code (A-Q)				<del>-</del>		
27 28	FINAL Roller Coverag	Code (A-Q) es	1 VIBE 1 STAT N _ 2.					
30	Compact	perature (*F) ed Thickness (In) Period (Days)	50 	 ·				
_		1 ,	-			<del></del>		

PREPARER Klomunes EMPLOYER SHRP FHWA DATE 11/5/91

· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
LTPP-SPS CONSTRUCTION DATA CONSTRUCTION QUALITY CONTROL MEASUREMENTS CONSTRUCTION DATA SHEET 9	* STATE CODE * SPS PROJECT CODE * TEST SECTION NO.	[3 0] [0 5] [0 3]

. NUCLEAR DEN	SITY MEASUREM	ENTS			
LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C) ¹			А	A	
Rod Depth (Inches)			0_0	00	
Number of Measurements			0 0	<u>0</u> a,	
Average (pcf)			148.4	147.8	
Maximum (pcf)	'		1485	748.0	)
Minimum (pcf)			<u> 148.a</u>	1175	Measurements as
Standard Deviation (pcf)	·_				
Layer Number			0.7	09	
¹ Measurement	Method Bacl	scatter A	Direct Transı	mission B	Air Gap C
MANUFACURE	R OF NUCLEAR I	DENSITY GAUGE		TRo	XLER
NUCLEAR DE	NSITY GAUGE MO	DDEL NUMBER		_344	0
NUCLEAR DE	NSITY GAUGE II	DENTIFICATION N	TUMBER	_/65	505
NUCLEAR GA	UGE COUNT RATE	E FOR STANDARDI	ZATION		355 <u>6</u> _
. PROFILOGRA	PH MEASUREMENT	rs			
Interpret Height of	ndex (Inches/	Manual 1 Me			

PREPARER Kemunes EMPLOYER SHRP JANA DATE 11/5/91

7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO)

- * STATE CODE
- * SPS PROJECT CODE
- * TEST SECTION NO.



# LAYER THICKNESS MEASUREMENTS (Inches)

SHEET ___ OF ___

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
<b>Q+Q</b> Q		:_	:_ :_		বাদ্যক্রদার নামানাবাদার নানানা	:_
O+20			:_		3)0777 	:- :-
1+00		:_ :_ :_			4 4 4 4 4                	:_
L+5 Q						
2+00					- । । । । । भ्रेग्रेज्यात्र्वा	:_
<u>2</u> +5_0	- 34 - 73 - 73 - 74 - 7	:_			415151818 415151818 61818181818	:_ :_
3+00	- 355 - 749 - 149		= := = := = :=			
LAYER NUMB	ER				_ 9	

PREPARER KEMUJOS

EMPLOYER SHEP/FHIM DATE 1/14/92

* STATE CODE

* SPS PROJECT CODE

* TEST SECTION NO.

## LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 2 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+5 Q	- 37 - 17 - 17 - 10					:_
4.00	- 300 - 300 - 120 - 150 - 150 - 150				7 10/4/4/9/3	
4+50	- 34600 - 37600				<u> </u>	
5+.00	- 334 - 748 - 148 - 148 - 1			:-		
+					:-   :-   :-	
_+				:-	:-	:_
+					:- :- :-	
LAYER NUMI	BER				9_	

PREPARER KEMUNGS

EMPLOYER SHEP/FHAS DATE 1/14/92

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE  * SPS PROJECT CODE  * TEST SECTION NO.	[3 0] [0 5] [0 3]
-----------------------------------------------------------------------------------------------------	------------------------------------------------------	-------------------------

Provide any miscellanious comments and notes concering construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indicatetion of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

Rod = level	SURVEYS	LERE	completed	before AND
Rod = level AFRR constru	ution. NO	mensu	væments væ	Re taken
before L'Fts.				
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		·		

PREPARER Kemunes EMPLOYER SHEP/FAMA DATE 1/4/92

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2 * STATE CODE

[30]

* SPS PROJECT CODE * TEST SECTION NO.

[<u>0 5</u>] [a 4]

1.LAYER NUMBER	2. LAYER	3. MATERIAL TYPE	4. LAYER THICKNESSES (Inches)				
NUMBER	DESCRIPTION	CLASS	AVERAGE	MINIMUM	MAXIMUM	STD. DEV.	
1	SUBGRADE(7)	[ <u>6</u> <u>a</u> ]		. A sassain			
2	(0 E)	(e a)	[_14.5]	_ <b></b> · -	<b></b>		
3	[ <u>0</u> <u>5</u> ]	[광호]	[4.25]		· <del>-</del>		
4	[ <u>0</u> <u>3</u> ]	[O]	( <u> </u>		· <b>-</b>	·-	
5	[09]	(o a)	[Q.0]		- <b>-</b> - · -		
6	[ <u>0</u> <u>a</u> ]	[ <u>8</u> <u>6</u> ]	[ 0.] ]				
7	[O T]	[O T]	[d.o]		<b></b>		
8	[ <u>o</u> <u>a</u> ]	[ <u>8 6</u> ]	[_Q.]]				
9	[O T]	[0 1]	[_3.0]				
10	[]	[]	[1				
11	[]	[]	[]				
12	[]	[]	[]	· <del>-</del>	<b>-</b>		
13	[]	[]	[ ]				
14	[]	[]	[]		·-	· - ·	
15	[]	[]	[]				

#### NOTES:

Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.

Layer description codes: Overlay......01 Base Layer......05 Seal/Tack Coat......02 Subbase Layer....06

Porous Friction Course..09 Surface Treatment.....10

Original Surface......03 Subgrade.......07 HMAC Layer (Subsurface).04 Interlayer......08

Embankment (Fill).....11

If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.

Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 3. which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.

4 Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER Klemunes

EMPLOYER SURPELLA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA
PRE-OVERLAY SURFACE PREPARATION SKETCH

* STATE CODE * SPS PROJECT CODE

05

CONSTRUCTION DATA SHEET 3 * TEST SECT

* TEST SECTION NO.

0 4

PREPARER Kemunes

EMPLOYER SHAP

DATE 11/5/9/

[<u>3</u> <u>0</u>] LTPP-SPS CONSTRUCTION DATA * SPS PROJECT CODE ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4 * TEST SECTION NO. 1. DATE PATCHING OPERATIONS BEGAN (Month-Day-Year) [__ _--__] 2. DATE PATCHING OPERATIONS COMPLETED 3. PRIMARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) Other (Specify)_____ 4. SECONDARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) Other (Specify) 5. SUMMARY OF PATCHING NUMBER TOTAL AREA (SQ. FT.) Surface Only Surface and partial base replacement [_____ Full depth 6. METHOD USED TO DETERMINE LOCATION AND SIZES OF PATCHES Deflection.... 1 Coring.... 2 Visual..... 3 Other..... 4 (specify) 7. METHOD USED TO FORM PATCH BOUNDARIES None ..... 1 Saw Cut..... 2 Air Hammer..... 3 Cold Milling.... 4 • Other..... 5 (Specify)_____ 8. COMPACTION EQUIPMENT Hand Tools...... 7 Other...... 8 (Specify)______ 9. PATCH MATERIAL Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2 Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4 Road Mix with Emulsified Asphalt..... 5 Portland Cement Concrete..... 6 Other.. 7 (Specify) 10. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__] 11. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (oF) 12. AIR TEMPERATURE DURING PLACEMENT OPERATIONS High Temperature (°F) Low Temperature (°F) 13. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__] Dry...... 1 Moist...... 2 Wet...... 3 PREPARER Klemma EMPLOYER SHRP/FHWA DATE 11/5/91

	LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE [3 0]  * SPS PROJECT CODE [0 5]  * TEST SECTION NO. [0 4]
1.	DATE LEVEL-UP LAYER APPLIED	[]
2.	PLACEMENT LOCATION OF LEVEL-UP LAYER Outside Rut 1 Inside Rut 2 Both Ruts	3 Full Lane Width 4
3.	LENGTH OF TEST SECTION COVERED  Full Length of Test Section 1  Partial Length of Test Section 2 (enter station + Inside Wheel Path Rut: Start Station + Inside Wheel Path Rut: Start Station +	[] art and end station numbers) End Station + End Station +
4.	AVERAGE RUT DIMENSIONS (Inches) Outside Wheel Path Ru Inside Wheel Path Ru	
5.	RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-U None 1 Broomed 2 Broomed + A Asphaltic Tack Coat (only) 4 Wheel Path Milling 5 (specify, inch Other 6 (Specify)	sphaltic Tack Coat 3 es) DEPTH WIDTH
6.	COMPACTION EQUIPMENT None	Luck Lile
7.	TYPE OF LEVEL-UP MATERIAL  Hot Mix Asphalt Concrete 1 Plant Mix with 6 Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Emulsified Asphalt	Road Mix with Cutback Asphalt. 4
8.	MAXIMUM TOP SIZE AGGREGATE (Inches)	[]
9.	MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING	TO TRAFFIC (Hrs) []
10.	MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENIN	G (if used) (°F) []
11.	AIR TEMPERATURE DURING PLACEMENT OPERATIONS High Temperature (°F) Low Temperature (°F)	[]
12.	PREDOMINATE ROAD SURFACE MOISTURE CONDITION DUR Dry 1 Moist 2 Wet	

NO LEVEL-4P

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRU PREPARATION OF MILLE CONSTRUCTION DA	D TEST SECTIONS	* STATE CO * SPS PRO. * TEST SEC	JECT CODE	[0 작] [0 환] [30]	
1. DATE OF MILLING OPERA	ATION .			109-0	3-9 LI
2. MANUFACTURER OF MILLI	ING MACHINE (Spec	ify)	C.	MI	
3. MILLING MACHINE MODE	L DESIGNATION (Sp	pecify) _	100	20	
4. WIDTH OF CUTTING HEAD	(Inches)				[ र व व व व व व व व व व व व व व व व व व
5. TOTAL MILLED DEPTH (	Inches)				
Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge					[%]
Outside lane edge	— <del></del> ·				[ <u>96</u> ]
6. Macro Texture Fine Macro Text  7. Estimate of exte  8. Height of Ridge  9. Other Comments? Comments	Between Parallel (Yes, No)	on surface a	area delamin		
10. WHERE PATCHES PLACE (If yes complete Co			-		[ <u>No</u> ]
11. LENGTH OF TIME MILL 12. WAS MILL REPLACEMEN 13. LAYER NUMBER OF MIL 14. NOMINAL THICKNESS OF 15. TYPE OF MILL REPLACE "Virgin" Asphalt Control Other 3 (Specify	T LAYER THICKER L REPLACEMENT F MILL REPLACEME EMENT LAYER MATE Increte 1	THAN MILL D INT MATERIAL IRIAL Recycled A	EPTH (YES,No. (Inches)	o) rete 2	[_48] [_Ne_] [Z] [_20]
16. WAS ADJACENT TRAVEL IF NO, WIDTH MILLED	LANE MILLED TO SAME DEPTH AS T	SAME DEPTH TEST LANE (F	AS TEST LAN eet)	E? (Yes, No)	]
DDEPARED KIRMUNI	· · · · · · · · · · · · · · · · · · ·	·	<del></del>		

OPEN GRADED 10 ....

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	LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [30]  * SPS PROJECT CODE [05]  * TEST SECTION NO. [04]
1.	SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLA None 1 Broomed 2 Broomed + As Asphaltic Tack Coat (only) 4	<u> </u>
2.	TACK COAT  Layer Numbers  Material Type None 1 SS-1 2 SS-1H  CRS-2 5 CMS-2 6 CMS-2H 7 CSS-1  Other 10 (Specify)	
	TACK COAT DILUTION (Percent)	[]   Diluent TO Parts Asphalt]   O ·]
5.	ASPHALT CONCRETE PLANT AND HAUL	
6.	MANUFACTURER OF ASPHALT CONCRETE PAVER	BLAUN-KNOX
7.	MODEL DESIGNATION OF ASPHALT CONCRETE PAVER	220 1971
8.	SINGLE PASS LAYDOWN WIDTH (Feet)	SURFACE [20.0]
9.	AC BINDER COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inche Nominal Second Lift Placement Thickness (Inche	
	AC SURFACE COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inche Nominal Second Lift Placement Thickness (Inche	2) <u>25 25 [-</u> ]
11.	SURFACE FRICTION COURSE Layer Number Nominal Placement Thickness (Inches)	
12.	TEST SECTION STATION OF TRANSVERSE JOINTS (with Binder Course Surface Course Surface Friction Course	in test section) [_ +] [_ +]
13.	LOCATION OF LONGITUDINAL SURFACE JOINT Between lanes. 1 Within lane. 2 (specify of	[ <u>/</u> ]  fset from O/S feet) []
14.	SIGNIFICANT EVENTS DURING CONSTRUCTION(disrupti	ons, rain, equip. problems, etc.)
		· · · · · · · · · · · · · · · · · · ·

PREPARER Klemunes EMPLOYER SHRP/FHLA DATE 11/5/91

		·	<del></del>					
	0	PP-SPS CONSTRUCTION VERLAY COMPACTION NSTRUCTION DATA SH	DATA		* STATE CO: * SPS PROJI * TEST SEC	ECT CODE	300	
1. 2.	DATE P	AVING OPERATIONS E	EGAN (Month-D	ay-Year)		[- 9:	10-01	]
3.	LAYER	NUMBER				Bottom	· · · · · · · · · · · · · · · · · · ·	1
4.	MIXING	TEMPERATURE (*F)					[절 <b>경 2</b> .	ī
S.	Mea Min	N TEMPERATURES (°F n	<u>a</u> 6 1	Numbe Maxin	r of Tests	· · · · · · · · · · · · · · · · · · ·	3 2 3	
	Roller Code #	107761	Gross Wt Ti (Tons)		requency ibr./Min)	Amplitude (Inches)		
67 89 10 11 12 13 14 15 16 17 18 19 20 21 22	C D E F G H I J K L M N O P	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Oother						Both 2.5mph-13 3.5mph-si
	COMPACT	ION DATA	First Lift	Second Lif	t Third	Lift Fou	rth Lift	
23 24	BREAKDO Roller Coverag	Code (A-Q)	IVIBR ISTAT M _ Q.					
25 26	INTERME Roller Coverag	Code (A-Q)						-
27	FINAL Roller Coverag	Code (A-Q) es	IVIBE ISTAT N.		-			
30 J	Compact	perature (°F) ed Thickness (In) Period (Days)		·				

PREPARER Klemunds EMPLOYED SHRP/FHWA DATE NOV 5, 1991

	0,	PP-SPS CONSTRUCTION VERLAY COMPACTION NSTRUCTION DATA SH	DATA		* STATE COI * SPS PROJE * TEST SECT	ECT CODE	100 4 100 4	
1. 2.	DATE P	AVING OPERATIONS E	EGAN (Month-1	lay-Year)		$-\frac{9}{4}$	1-91	]
3.	LAYER	NUMBER						1
4.	MIXING	TEMPERATURE (°F)					. <u>2</u>	· 1
5.		N TEMPERATURES (*F	) _					
ROL	Min Star LER DAT	nimumndard Deviation	 9 6 7 8 6 8	Numbo Maxir	er of Tests	• • • • • • • • • • • • • • • • • • • •	â 7 <b>0</b>	
	Roller Code #		Gross Wt Ti		Frequency Vibr./Min)	Amplitude (Inches)	Speed (mph)	
6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	B C D E F G H I J K L M N O P	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Oother						Both 2.5mph-VI 3.5mph-STA
	COMPACT	CION DATA	First Lift	Second Lif	t   Third I	Lift Four	th Lift	
23 24	BREAKDO Roller Coverag	Code (A-Q)	IVIBR ISTAT M.					
25 26	INTERME Roller Coverag	Code (A-Q)						
27	FINAL Roller Coverag	Code (A-Q) es	IVIBE   STAT N _ Q		- - -			
30	Compact	perature (°F) ed Thickness (In) Period (Days)				- · - · · - · · · · · · · · · · · · · ·		
			-					l

PREPARER Kleynungs EMPLOYER SHRP FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA

CONSTRUCTION QUALITY CONTROL MEASUREMENTS

CONSTRUCTION DATA SHEET 9

* STATE CODE | 3 0 |

* SPS PROJECT CODE | 0 5 |

* TEST SECTION NO. | 0 4 |

1.	NUCLEAR	DENSITY	MEASUREMENTS
----	---------	---------	--------------

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C) ¹			A	A	
Rod Depth (Inches)			00	00	
Number of Measurements			o a	08	
Average (pcf)			1485	1489	
Maximum (pcf)			149.0	149.1	)·-
Minimum (pcf)			147.9	148.6	TESTER NOTED MEASUREMENTS ) Which is not y
Standard Deviation (pcf)					
Layer Number			27	09	

	¹ Measurement Method Backscatter A Direct Transmission B	Air Gap C
2.	MANUFACURER OF NUCLEAR DENSITY GAUGE	axkR_
3.	NUCLEAR DENSITY GAUGE MODEL NUMBER	40
<b>4</b> .	NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER	505
5.	NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION	3556_
6.	PROFILOGRAPH MEASUREMENTS	
	Profilograph Type California 1 Rainhart 2 Profile Index (Inches/Mile) Interpretation Method Manual 1 Mechanical 2 Computer 3 Height of Blanking Band (Inches) Cutoff Height (Inches)	
7.	SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO)	NC

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE NOW 5, 1991

* STATE CODE

* SPS PROJECT CODE

* TEST SECTION NO.

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# LAYER THICKNESS MEASUREMENTS (Inches)

SHEET  $\bot$  of  $\underline{\underline{\hat{A}}}$ 

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
<u>O+O</u> O	98 - 379 - 45 - 45	_ <b>_</b> :_		:_ :_	이 <b>4</b> 전략 역	: :
Q+.5 Q	- 37 - 38 - 45 - 45		:-		্ৰাঞ্চল্ডল শ্বাদ্যাদ্যাদ্যাদ্যাদ্যাদ্যাদ্যাদ্যাদ্যাদ্য	
1+00	- 378 - 378 - 14 - 15		:- :-		- 4 4 5 4 - 4 5 4 4 5 4	
L+5.0	- 35 - 37 - 74 - 49		:-		4 4 4 5 4 9 9 9 9 9 9 9	
<i>9</i> +20	이 에 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이	:_ :_ :_				:-
a+50	기기     기기   제지시기				वामपास्य	:-
3+00					न । । । । अक्षणम् ज्ञान्न्यम्	
LAYER NUMBI	ER				_9	

PREPARER Konures

EMPLOYER FALA SHOP DATE 1/14/90

* STATE CODE

* SPS PROJECT CODE

* TEST SECTION NO.

[3 0] [0 5] [0 4]

## LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 2 OF 8

	<u> </u>		<del> </del>	<del></del>		
STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+50	- 377 - 14 - 14		:-		्याक्षक्षेत्रज्ञ 	:_ :_
4+00	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1				41414141414141414141414141414141414141	
<u>4+50</u>	11-17-17-17-17-17-17-17-17-17-17-17-17-1				প্রামান্থ 	
5+00					-4507 -507 -51.7	:_ :_
+					:	
_+				:-		:_
_+					:_ :_	==:=
LAYER NUMB	ER					

PREPARER KODURES EMPLOYER FALA SHED DATE 1/14/90

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE [30]  * SPS PROJECT CODE [05]  * TEST SECTION NO. [04]
Provide any miscellanious comments and notes concernant have an influence on the ultimate performance of cause undesired performance differences to occur be any quality control measurements or data for which forms. Provide an indicatetion of the basis for such AASHTO, or Agency standard test designation.	of the test sections or which may tween test sections. Also include a space is not provided on other the measurements, such as an ASTM,
Rod And level survey's he	ere completed before
AND AFTER CONSTRUCTION. NO	mexure monts were
taken between Lists.	
	· · · · · · · · · · · · · · · · · · ·
	· · · · · · · · · · · · · · · · · · ·
	,

PREPARER Kemunes EMPLOYER SHOP FHANA DATE 1/4/90

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2 * STATE CODE

[**3** o]

* SPS PROJECT CODE

05

* TEST SECTION NO.

(0 5)

1.LAYER 2. LAYER NUMBER DESCRIPTION		3. MATERIAL	AYER THICK	YER THICKNESSES (Inches)		
NUTLBER	DESCRIPTION	TYPE CLASS	AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[6 a]	29 x 1 1	s considerates	1. Alta 1950	allipiadia
2	[0 <u>6</u> ]	[ <u>6</u> <u>8</u> ]	[_15.1]			<b>-</b>
3	( <u>0</u> <u>5</u> )	[골 &]	[a.15]			
4	(Q3)	[6]	( <b>5</b> .as)	·- ·		
5	[Q 9]	(0 g)	[00]			
6	(Qa)	(8 6)	[Q.]]		'-	
7	[O T]	[OT]	[20]			
8	[]	[]	[ ]	- <b>-</b> -'-		
9	[]	[]	[ ]			
10	[]	[]	[]			
11	[]	[]	[]	·-	  '-	
12	[]	[]	[ ]	<del>-</del> ·-	<b>-</b> · -	
13	[]	[]	[ ]			
14	[]	[]	[ ]			
15	[]	[]	[ ]			

### NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.

Layer description codes:

If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.

- 3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.
- 4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

$\mathcal{N}$	REON	
LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3	* STATE CODE * SPS PROJECT CODE * TEST SECTION NO.	[] []

PREPARER Klenungs EMPLOYER SHRP/FHWA DATE 11/5/91

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

12. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS

Dry...... 1 Moist...... 2

PREPARER Klemunes ____

_	EMPLOYER	SHRP/FHWA	DATE _	11/5/91	
		•		•	

Wet...... 3

 $\begin{bmatrix} 1 \end{bmatrix}$ 

[30]

OPEN GRADED * STATE CODE LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS * SPS PROJECT CODE * TEST SECTION NO. CONSTRUCTION DATA SHEET 6

	NATE OF MILITUE OBERA	TT ON			[ A 9 A	2011		
	1. DATE OF MILLING OPERATION [Q 9-03-91]							
2. 1	MANUFACTURER OF MILLI	NG MACHINE (Spec	city) _		7+	<del></del>		
3. 1	MILLING MACHINE MODE	. DESIGNATION (SI	pecify) _		20	<del></del>		
4. 1	WIDTH OF CUTTING HEAD	(Inches)				[1 E O]		
5.	TOTAL MILLED DEPTH (	Inches)						
	Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average		
	Inside lane edge	'				[96]		
	Outside lane edge					[96]		
	LED SURFACE CHARACTER  6. Macro Texture Fine Macro Textu	RISTICS ure (≤¼ inch)	1 Coarse	e Macro Text	cure(>¼ inch)	2		
	7. Estimate of exten	nt of test section	on surface a	area delamin	nated (Percen	t) [_ <u>0</u> ]		
	8. Height of Ridge	Between Parallel	Passes? (In	nches)	,	[ <u>o</u> ]		
	9. Other Comments?	(Yes, No)			·	[10]		
	Comments							
10.	WHERE PATCHES PLACE (If yes complete Co					[ <u>NO</u> ]		
12. 13.	11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.)  12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES,NO)  13. LAYER NUMBER OF MILL REPLACEMENT  14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches)  []							
15.	TYPE OF MILL REPLAC "Virgin" Asphalt Co Other 3 (Specify	ncrete 1	Recycled A		rete 2	[ <u>T</u> ]		
16.	WAS ADJACENT TRAVEL IF NO, WIDTH MILLED				E? (Yes, No)	[ <u>Yes</u> ]		
17.	COMMENTS							
		<u> </u>		·				

	·	
	LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [30]  * SPS PROJECT CODE [05]  * TEST SECTION NO. [05]
1.	SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLA None 1 Broomed 2 Broomed + As Asphaltic Tack Coat (only) 4	
2.	TACK COAT Layer Numbers Material Type None 1 SS-1 2 SS-1H CRS-2 5 CMS-2 6 CMS-2H 7 CSS-1 Other 10 (Specify)	
3.	TACK COAT DILUTION (Percent)	[]
4.	Mixing Rate Parts TACK COAT APPLICATION RATE (Gal/Sq. Yd.)	Diluent TO Parts Asphalt
5.	ASPHALT CONCRETE PLANT AND HAUL  Type Name Haul Distance  Plant 1 [2] Areing 400 Coal [ 4  Plant 2 [ ] [	te (Mi) Time (Min) Layer Numbers
6.	MANUFACTURER OF ASPHALT CONCRETE PAVER	BLAUN-KNOX
7.	MODEL DESIGNATION OF ASPHALT CONCRETE PAVER	<u>aao 1971</u>
8.	SINGLE PASS LAYDOWN WIDTH (Feet)	[ <u>d</u> <u>a</u> . <u>o</u> ]
9.	AC BINDER COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inches Nominal Second Lift Placement Thickness (Inc	· — , — , — , — · — · — · — ·
	AC SURFACE COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inches Nominal Second Lift Placement Thickness (In	
II.	SURFACE FRICTION COURSE  Layer Number  Nominal Placement Thickness (Inches)	
12.	TEST SECTION STATION OF TRANSVERSE JOINTS (with Binder Course Surface Course Surface Friction Course	in test section) [ +] [ +] [ +]
13.	LOCATION OF LONGITUDINAL SURFACE JOINT Between lanes 1 Within lane 2 (specify of	fset from O/S feet) []
14.	SIGNIFICANT EVENTS DURING CONSTRUCTION(disrupti	ons, rain, equip. problems, etc.)
PR	EPARER <u>Klemunes</u> EMPLOYER <u>SHEP</u>	FHAHA DATE 11/5/91

	0,	PP-SPS CONSTRUCTION VERLAY COMPACTION STRUCTION DATA SH	DATA		* STATE CO * SPS PROJ * TEST SEC	EST CODE	300 300 300 300 300 300 300 300 300 300	
1. 2.	DATE P	AVING OPERATIONS B	EGAN (Mont	h-Day-Year)	<del>- :                                   </del>	<u> </u>	1-91	]
3.	LAYER	NUMBER				· <u> </u>		ļ
4.	MIXING	TEMPERATURE (*F)				r		•
	Mea Min	N TEMPERATURES (°F nimumndard Deviation	272	Nw Mai	mber of Tests ximum		295. 375.	
	Roller Code #		Gross Wt	Tire Press.	Frequency (Vibr./Min)	Amplitude (Inches)		
	D E F G H I J K L M N O P	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Other						Both 2.5mph-VIE 3.5mph-STAT
	COMPACT	TION DATA	First Lif	t Second I	ift   Third	Lift Four	th Lift	
23 24	BREAKDO Roller Coverage	Code (A-Q)	IVIBR ISTAT M — â				-	
25 26	INTERME Roller Coverage	Code (A-Q)		; 				
27 28	FINAL Roller Coverage	Code (A-Q) ses	IVIBE ISTAT	¥.				
30	Compact	perature (*F) ed Thickness (In) Period (Days)	_ 75			 		

PREPARER Klamunes EMPLOYER 5489 FHWA DATE 1/-5-91

LTPP-SPS CONSTRUCTION DATA
CONSTRUCTION QUALITY CONTROL MEASUREMENTS
CONSTRUCTION DATA SHEET 9

* STATE CODE

[30]

* SPS PROJECT CODE * TEST SECTION NO. [<u>05</u>]

## 1. NUCLEAR DENSITY MEASUREMENTS

Profilograph Type

Profile Index (Inches/Mile)

Cutoff Height (Inches)

Height of Blanking Band (Inches)

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer			
Measurement Method (A, B, C) ¹				A				
Rod Depth (Inches)				9				
Number of Measurements								
Average (pcf)								
Maximum (pcf)		_ 4 2.4		1494				
Minimum (pcf)				146.8				
Standard Deviation (pcf)								
Layer Number	Layer Number							
¹ Measuremen	t Method Bac	kscatter A	Direct Trans	mission B	Air Gap C			
2. MANUFACUR	2. MANUFACURER OF NUCLEAR DENSITY GAUGE Trox/ee							
NUCLEAR DENSITY GAUGE MODEL NUMBER 3440								
4. NUCLEAR D	ENSITY GAUGE 1	DENTIFICATION	NUMBER	_/65	05			
5. NUCLEAR G	AUGE COUNT RAT	E FOR STANDARD	IZATION		3556_			
6. PROFILOGR	PROFILOGRAPH MEASUREMENTS							

7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO)

Interpretation Method Manual.. 1 Mechanical.. 2 Computer.. 3

PREPARER Klemunes EMPLOYER SHAP FHWA DATE 11/5/91

California... 1 Rainhart... 2

* STATE CODE

* SPS PROJECT CODE

[20] [0 5]

* TEST SECTION NO.

# LAYER THICKNESS MEASUREMENTS (Inches)

SHEET ___ OF 2

STATION NUMBER  OFFSET (Inches)  RUT (Inches)  RUT (Inches)  RUT (Inches)  REPLACEMENT COURSE  SURFACE COURSE  SURFACE FRECTION LAYER  SURFACE FRECTION LAYER  SURFACE FRECTION LAYER  COURSE  SURFACE FRECTION LAYER  COURSE  OFFSET (Inches)  RUT (Inches)					
4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50  4-50					SURFACE FRCTION LAYER
1	Q+Q D	- <u>375</u> - <u>375</u> - <u>74</u> - <u>7</u>			:-
7+45 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Q+5Q				:-
######################################	L+0.0	- 37 - 37 - 34 - 41 - 42 - 42			
A	L+50	38 - 79 - 75 - 45 - 45			:_
3+0	<b>ශ</b> +ත	774			
- 38 : : : : : - : - :		- <del>4</del> 9			
LAYER NUMBER	3+00	- 38 - 75 - 74 - 150	:_ :_		
	LAYER NUMB	ER		 7	

PREPARER Klemunes

- * STATE CODE
- * SPS PROJECT CODE
- * TEST SECTION NO.

[05] [05]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET A OF A

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+50	- 97 - 97 - 75 - 75 - 75 - 75 - 75 - 75 - 75 - 7		:-		1         1           1	: :-
4+00	- 19 9 - 19 9 - 19 8 - 19 8 - 19 8					
1+50	- 3 - 3 - 4 - 4 - 4 - 4		:-			:_
<b>5</b> +0∫						
_+						
+		:_ :_ :_				:-
_+				:-	: - : - : -	
LAYER NUMBI	ER				7	

PREPARER Komunes EMPLOYER SHOP FATHER DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE [3 o]  * SPS PROJECT CODE [o 5]  * TEST SECTION NO. [o 5]
Provide any miscellanious comments and notes conce may have an influence on the ultimate performance cause undesired performance differences to occur b any quality control measurements or data for whice forms. Provide an indicatetion of the basis for se AASHTO, or Agency standard test designation.	of the test sections or which may between test sections. Also include ch space is not provided on other uch measurements, such as an ASTM,
Rod AND Level SURVEY'S ME OFFICE CONSTRUCTION. NO MORE LETARGED LIFTS.	ere done before and
OFFER CONSTRUCTION. NO MER	surements were taken)
Letacoa) Lifts.	
<u> </u>	
	·
·	
PREPARER John Klemings EMPLOYER 5/89	1 EULA DATE MARIA
PREPARER	1/7/04 DATE 1//7/04

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2 * STATE CODE

F

* SPS PROJECT CODE * TEST SECTION NO. (0 6) (3 0)

1.LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE	4. 1	AYER THICE	(NESSES (Ir	nches)
NOMBER	DESCRIPTION	CLASS	AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[62]	is the institute of the second	11.740.000	St. Status volta	
2	[0 E]	(E 9)	[_15.1]			
3	10 51	[ख छ]	[a.15]			
4	[0.3]	[0 1]	[3.25]			'-
5	[0 9]	[ठ दो]	[0.0]			
6	(0 a)	[ <u>8 6]</u>	[0.]]			
7	[O T]	(0 T)	[a.o]			
8	(C a)	[중 <i>로</i> ]	[6.1]			
9	[QL]	[ <u>O</u> <u>I</u> ]	[3.5]			
10	[]	[]	[,_]			
11	[]	[]	[]			
12	[]	[]	[ · _ ]			
13	[]	[]	[]			
14	[]	[]	[]			·-
15	[]	[]	[]		<u> </u>	<u> </u>

### NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.

If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.

- 3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.
- 4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

NO PICT	ture Read	
LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3	* STATE CODE * SPS PROJECT CODE * TEST SECTION NO.	[]

PREPARER <u>Klamunes</u>

______ EMPLOYER <u>5/4RP / F/4WA</u> DATE <u>| | /5/9/</u>

	NO PATCHING					
	ASPHALT CONCRETE PATCHES * SP:	ATE CODE [] S PROJECT CODE [] ST SECTION NO. []				
1.	DATE PATCHING OPERATIONS BEGAN (Month-Day-Year)	[				
2.	DATE PATCHING OPERATIONS COMPLETED	[				
3.	PRIMARY DISTRESS OCCURRENCE PATCHED (code from Table Other (Specify)	A.22) [				
4.	SECONDARY DISTRESS OCCURRENCE PATCHED (code from Tab Other (Specify)					
5.	SUMMARY OF PATCHING NUMBER Surface Only [] Surface and partial base replacement [] Full depth []	TOTAL AREA (SQ. FT.				
6.	METHOD USED TO DETERMINE LOCATION AND SIZES OF PATCH Deflection 1 Coring 2 Visual 3 Other 4 (specify)	·				
7.	METHOD USED TO FORM PATCH BOUNDARIES  None 1 Saw Cut 2 Air Hammer 3  Other 5 (Specify)	Cold Milling 4				
8.	COMPACTION EQUIPMENT None	Tire 6				
9.	PATCH MATERIAL  Hot Mix Asphalt Concrete 1 Plant Mix with Cutbac  Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road  Road Mix with Emulsified Asphalt	Mix with Cutback Asphalt. land Cement Concrete				
10.	. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO T	RAFFIC (Hrs) [				
11.	. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if	used) (°F) [				
12.	. AIR TEMPERATURE DURING PLACEMENT OPERATIONS High Temperature (°F) Low Temperature (°F)	[ [				
13.	. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING F Dry 1 Moist 2 Wet 3	LACEMENT OPERATIONS [				
DDF	EDADED Planting SMDI OVED -1100/544	1 DATE - 1/2/				

,	NO le	VEL UP
	LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE []  * SPS PROJECT CODE []  * TEST SECTION NO. []
1.	DATE LEVEL-UP LAYER APPLIED	[]
2.	PLACEMENT LOCATION OF LEVEL-UP LAYER Outside Rut 1 Inside Rut 2 Both Ruts	3 Full Lane Width 4
3.	LENGTH OF TEST SECTION COVERED  Full Length of Test Section 1  Partial Length of Test Section 2 (enter st  Outside Wheel Path Rut: Start Station +  Inside Wheel Path Rut: Start Station +	art and end station numbers)  End Station +  End Station +
4.	AVERAGE RUT DIMENSIONS (Inches) Outside Wheel Path Ru Inside Wheel Path Ru	·— — · ·— · · · · · · · · · · · · · · ·
5.	RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-U None 1 Broomed 2 Broomed + A Asphaltic Tack Coat (only) 4 Wheel Path Milling 5 (specify, inch Other 6 (Specify)	sphaltic Tack Coat 3 es) DEPTH WIDTH
6.	COMPACTION EQUIPMENT None	Tuck Tire
7.	TYPE OF LEVEL-UP MATERIAL  Hot Mix Asphalt Concrete 1 Plant Mix with Plant Mix with Emulsified Asphalt, Cold Laid. 3  Road Mix with Emulsified Asphalt	Road Mix with Cutback Asphalt. 4
8.	MAXIMUM TOP SIZE AGGREGATE (Inches)	[]
9.	MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING	TO TRAFFIC (Hrs)
10.	MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENIN	G (if used) (°F) []
11.	AIR TEMPERATURE DURING PLACEMENT OPERATIONS High Temperature (°F) Low Temperature (°F)	[]
12.	PREDOMINATE ROAD SURFACE MOISTURE CONDITION DUE Dry 1 Moist 2 Wet	
PRE	PARER Klemunes EMPLOYER SHRP/H	THWA DATE 11/5/91

PEN GRADED LIPP-SPS CONSTRUCTION DATA [30] * STATE CODE PREPARATION OF MILLED TEST SECTIONS * SPS PROJECT CODE [0 5] CONSTRUCTION DATA SHEET 6 * TEST SECTION NO. 1. DATE OF MILLING OPERATION [09-03-91] 2. MANUFACTURER OF MILLING MACHINE (Specify) CMT____ 3. MILLING MACHINE MODEL DESIGNATION (Specify) 4. WIDTH OF CUTTING HEAD (Inches) [150] 5. TOTAL MILLED DEPTH (Inches) Location No. Measrmnts Std. Dev. | Average Maximum Minimum Inside lane edge [<u>__</u>.<u>96</u>] Outside lane edge [<u>_..9</u><u>&</u>] MILLED SURFACE CHARACTERISTICS 6. Macro Texture Fine Macro Texture (≤k inch)... 1 Coarse Macro Texture(>k inch)... 2 8. Height of Ridge Between Parallel Passes? (Inches) [<u>_</u>.<u>o</u>] 9. Other Comments? (Yes, No) [NO] Comments _____ 10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO_] (If yes complete Construction Data Sheet 3) 11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) 12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES, NO) 13. LAYER NUMBER OF MILL REPLACEMENT 14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) 15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [L]"Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2 Other... 3 (Specify) 16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES] IF NO. WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) 17. COMMENTS ____

PREPARER Klemunes EMPLOYER SHAP FHWA DATE 11/5/91

PR	LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS CONSTRUCTION DATA SHEET 6				ODE JECT CODE CTION NO.	[0 6] [0 2] [3 0]	
1. DAT	TE OF MILLING OPERA	ATION .			129-0	6-9/1	
2. MANUFACTURER OF MILLING MACHINE (Specify)							
3. MII	3. MILLING MACHINE MODEL DESIGNATION (Specify) 750						
4. WII	OTH OF CUTTING HEAD	(Inches)				12501	
5. TO	TAL MILLED DEPTH (	Inches)					
	Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average	
	Inside lane edge	11.	2.5	_ 2.0		[ <u>2</u> . <b>1</b> ]	
	Outside lane edge	<u> </u>	<u> </u>	_ <u>2</u> . <u>0</u>		[ <u>Z.<b>1</b></u> ]	
6. 7. 8.	Fine Macro Texton  Estimate of exter  Height of Ridge 1	ure (≤¼ inch) nt of test section Between Parallel	on surface a	area delamin nches)	nated (Percen	t) []	
9.	Other Comments? Comments Pa	(Yes, NO) 155119 Lane cknoss with	hal abo	0+ 10%	Delam not	1 (YES)	
	MERE PATCHES PLACE If yes complete Co	D AFTER MILLING?	(Yes, No)	,		[1/0]	
12. W	ENGTH OF TIME MILL AS MILL REPLACEMEN AYER NUMBER OF MIL OMINAL THICKNESS O	T LAYER THICKER L REPLACEMENT	THAN MILL D	EPTH (YES,N	0)	[0] [10] [Z] [_a.0]	
927	15. TYPE OF MILL REPLACEMENT LAYER MATERIAL  "Virgin" Asphalt Concrete 1 Recycled Asphalt Concrete 2  Other 3 (Specify)						
16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [ 5] IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) []							
17. C	OMMENTS						
			<del></del>	· 			
	•		•				
<del></del>							
מסמת	ADED Por	FMDI OV	FR Alias	. L =	DATE U	-/01	

	LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE (3)  * SPS PROJECT CODE (0)  * TEST SECTION NO. (0)
1.	SURFACE PREPARATION PRIOR TO PLACEMENT None 1 Broomed 2 Bro Asphaltic Tack Coat (only) 4	OF OVERLAY omed + Asphaltic Tack Coat 3
2.	Layer Numbers Material Type None 1 SS-1 2 CRS-2 5 CMS-2 6 CMS-2H 7	SS-1H 3 CRS-1 4 [26] [C] CSS-1 8 CSS-1H 9
	Other 10 (Specify) TACK COAT DILUTION (Percent) Mixing Rate	Parts Diluent TO Parts Asphal
4.	TACK COAT APPLICATION RATE (Gal/Sq. Ye	r.) [ <i>Q</i> · ]
	ASPHALT CONCRETE PLANT AND HAUL  Type Name Hau  Plant 1 [6] Pring 400 Coal Fixed  Plant 2 [ ]  Plant 3 [ ]  Plant Type: Batch 1 Drum Mix.	
6.	MANUFACTURER OF ASPHALT CONCRETE PAVER	BLAUN-KNO
7.	MODEL DESIGNATION OF ASPHALT CONCRETE I	PAVER 20 1971
8.	SINGLE PASS LAYDOWN WIDTH (Feet)	SURFICE [20
9. 10.	AC BINDER COURSE LIFT Layer Number Nominal First Lift Placement Thicknes Nominal Second Lift Placement Thicknes AC SURFACE COURSE LIFT Layer Number Nominal First Lift Placement Thicknes	2 (Inches) [
11.	Nominal Second Lift Placement ThicknessURFACE FRICTION COURSE Layer Number Nominal Placement Thickness (Inches)	
12.	TEST SECTION STATION OF TRANSVERSE JOIN Binder Course Surface Course Surface Friction Course	WTS (within test section) [ + _ [_ + _ [_ + _
13.	LOCATION OF LONGITUDINAL SURFACE JOINT Between lanes 1 Within lane 2 (s	
14.	SIGNIFICANT EVENTS DURING CONSTRUCTION  Sept 7. Paris 245 rosed 6  OF Section 200507	(disruptions, rain, equip. problems, 9 FT into the thouch populations

	LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8				* STATE CODE * SPS PROJECT CODE * TEST SECTION NO.		[2] [2] [2]	
l. 2.	DATE PAVING OPERATIONS BEGAN (Month-Day-Year)  DATE PAVING OPERATIONS COMPLETED  [							[ 
3.	Trace A / Trace						( <u>7</u> )	
١.							( <u>295</u> .)	
iol	LAYDOWN TEMPERATURES (°F)       Mean							
	Roller Code #	l .	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)		
6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	BCDEFGHIJKLMNOP	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr.						High 255 1 212
	COMPACTION DATA		First Lif	t   Second Li	ft Third	Lift Four	rth Lift	
	BREAKDOWN Roller Code (A-Q) Coverages		101b., 15tor M	_				
	INTERMEDIATE Roller Code (A-Q) Coverages							
	FINAL Roller Code (A-Q) Coverages		1 0 16. 1 State 1	2.				
30	9 Air Temperature (°F) 0 Compacted Thickness (In) 1 Curing Period (Days)					·		

PREPARER Klemunes EMPLOYER SHRP FHWA DATE 11/5/91

1. 2. 3. 4. 5.	DATE PAVING OPERATIONS  LAYER NUMBER  MIXING TEMPERATURE (°F  LAYDOWN TEMPERATURES (     Mean	N DATA SHEET 8  BEGAN (Month-Day-Y COMPLETED  *F) 2 5 7		ECT CODE TION NO.  [9 [9	[ <b>9</b> ] 3 <b>9 5</b> .	
ROL	Standard Deviation. LLER DATA	·· — —·—			21 Q 22	
	Roller Roller Code # Description	Gross Wt Tire Programme (Tons) (psi)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Amplitude (Inches)	Speed (mph)	
66 77 88 99 100 11 122 133 144 155 166 177 188 199 200 21	B Steel-Whl Tande Steel-Whl Tande D Steel-Whl Tande D Steel-Whl Tande F Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired H Pneumatic-Tired I Single-Drum Vibit Single-Drum Vibit Single-Drum Vibit Double-Drum Vibit Double-Drum Vibit Double-Drum Vibit Double-Drum Vibit Double-Drum Vibit					2.5/3.5 mçir
	COMPACTION DATA		ond Lift Third I	ift Fourt	h Lift	
23	BREAKDOWN Roller Code (A-Q) Coverages	I VEBP I STAT M _ Q.				
25 26	INTERMEDIATE Roller Code (A-Q) Coverages					
27 28	FINAL Roller Code (A-Q) Coverages	IVIBR ISTAT N				
30	Air Temperature (*F) Compacted Thickness (In Curing Period (Days)	_ <u>75</u>		· ·		
PRE	PREPARER KISMUMOS EMPLOYER SHRP/FHWA DATE 11/5/91					

1	NUCLEAR	DENSITY	MEASUREMENT	S

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C) ¹		A		A	
Rod Depth (Inches)		0_0		00	
Number of Measurements	<u> </u>	q		<u> </u>	
Average (pcf)		148.9		150.0	
Maximum (pcf)		150.8	·	150.0	'-
Minimum (pcf)		116.9		1499	
Standard Deviation (pcf)					
Layer Number		07		09	

<u> </u>	<u></u>	,	[	L	L	
Average (pcf)		148.9		150.0		
Maximum (pcf)		150.8		150.0		
Minimum (pcf)		146.9		1999		
Standard Deviation (pcf)						
Layer Number		07		09		
¹ Measuremen	t Method Bacl	kscatter A	Direct Trans	mission B	Air Gap C	
2. MANUFACUR	er of nuclear i	DENSITY GAUGE		120	XKR_	
3. NUCLEAR D	ENSITY GAUGE MO	ODEL NUMBER		_34	140	
4. NUCLEAR D	ENSITY GAUGE I	DENTIFICATION	NUMBER	165	505	
5. NUCLEAR G	AUGE COUNT RAT	E FOR STANDARD	IZATION		3556_	
6. PROFILOGR	APH MEASUREMEN	rs				
Profilograph Type California l Rainhart 2 Profile Index (Inches/Mile) Interpretation Method Manual l Mechanical 2 Computer 3 Height of Blanking Band (Inches) Cutoff Height (Inches)						
7. SURFACE P	ROFILE USED AS	BASIS OF INCE	NTIVE PAYMENT?	(YES, NO)	1/0	
PREPARER &	Commen	EMPLOYER	SUPP/FHI.	v⊿ DATE	11/5/91	

* STATE CODE

* SPS PROJECT CODE

* TEST SECTION NO.

[30] [05] [06]

# LAYER THICKNESS MEASUREMENTS (Inches)

SHEET  $\bot$  of 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
Q+Q a	37700 7700 	:- :- :-			- I I I I I I I I I I I I I I I I I I I	:- :-
Q+5 Q	- 3 - 3 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7		:_		               	:
Z+Q o			:_			
Z+5 Q	0149451 1371 151 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 10149451 1014					
3+0 O	- 374 - 74 - 75 - 74 - 75					
Q+5 O						:-
3+00	- MANA - NA - NA - NA - NA - NA - NA - NA -					
LAYER NUMB	ER				_ 9	

PREPARER Komunes EMPLOYER SHOP JEHNA DATE 1-14-90

* STATE CODE

[30]

* SPS PROJECT CODE * TEST SECTION NO. <u>0</u> 5

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET Q of A

						<del></del>
STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+5 Q	- 3794 - 7794 - 750				3/4/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/	: :
4+00	- 37750 - 7750					: : :
1+50		:_ :_ :_				: :
5+00		:_ :_ :_			7180007 	
_+						
+		:- :- :-				:
+						
LAYER NUMBI	ER				9	

PREPARER Komunes EMPLOYER SHAP FHIM DATE 1-14-90

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE * SPS PROJECT CODE * TEST SECTION NO.	[ <u>30]</u> [ <u>05]</u> [ <u>06]</u>
-----------------------------------------------------------------------------------------------------	----------------------------------------------------	----------------------------------------------

Provide any miscellanious comments and notes concering construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indicatetion of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

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ATTER	consti	euction.	110	MAGUE	enents	here	taken	be from
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PREPARER Klemines EMPLOYER SHAP / F416 DATE 1/4/90

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2 * STATE CODE

[3 5]

* SPS PROJECT CODE * TEST SECTION NO. [<u>0 5]</u> [<u>0 7</u>]

1. LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE	4. 1	AYER THICK	CNESSES (In	ches)
HOIBER	DESCRIPTION	CLASS	AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE (7)	[ <u>6</u> a]	But the fine of the con-	. M. William B	e o alifeti	
2	( <u>0</u> 6)	[6 a]	[_15.1]			
3	[05]	[ब क्।	[a. <u>75</u> ]	'-		
4	[C 3]	(女工)	[3.a5]		·-	
5	10 91	[ <u>क</u> क्]	[0.0]	_ <b>-</b> - · -	'-	
6	10 a1	(8 E)	[0.]]	· -		
. 7	10 TI	[0 1]	[_a.o]			
8	(0 a)	[8 E]	[Q] ]			
9	[O T]	[O T]	[a,o]			
10	( <u>0</u> <u>a</u> )	[8 E]	[0.1]			
11	· [a L]	(QI)	[3.0]			
12	[]	[]	[]			
13	[]	[]	[ ]			
14	[]	[]	[ ]		- <b>-</b> - · <b>-</b>	
15	[1	[]	[]	<u> </u>		

#### NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.

2. Layer description codes:

Overlay...........01 Base Layer.....05 Porous Friction Course..09
Seal/Tack Coat......02 Subbase Layer.....06 Surface Treatment......10
Original Surface.......03 Subgrade........07 Embankment (Fill)......11
HMAC Layer (Subsurface).04 Interlayer.....08

If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.

3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.

4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

NO Read

LTPP-SPS CONSTRUCTION DATA
PRE-OVERLAY SURFACE PREPARATION SKETCH
CONSTRUCTION DATA SHEET 3

* STATE CODE

* SPS PROJECT CODE

[0 5]

. October 1990 OPEN GRADED LTPP-SPS CONSTRUCTION DATA [30] [05] * STATE CODE PREPARATION OF MILLED TEST SECTIONS * SPS PROJECT CODE CONSTRUCTION DATA SHEET 6 * TEST SECTION NO. 1. DATE OF MILLING OPERATION 109-03-9/1 2. MANUFACTURER OF MILLING MACHINE (Specify) ___CmT 3. MILLING MACHINE MODEL DESIGNATION (Specify) 4. WIDTH OF CUTTING HEAD (Inches) [150] 5. TOTAL MILLED DEPTH (Inches) Location No. Measrmnts Maximum Std. Dev. Minimum Average Inside lane edge [_.96] Outside lane edge MILLED SURFACE CHARACTERISTICS 6. Macro Texture Fine Macro Texture (sk inch)... 1 Coarse Macro Texture(>k inch)... 2 8. Height of Ridge Between Parallel Passes? (Inches) [<u>_</u>._] 9. Other Comments? (Yes, No)  $[\mathcal{L}_0]$ Comments 10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO] (If yes complete Construction Data Sheet 3) 11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) 12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES, NO) 13. LAYER NUMBER OF MILL REPLACEMENT 14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) 15. TYPE OF MILL REPLACEMENT LAYER MATERIAL "Virgin" Asphalt Concrete ..... l Recycled Asphalt Concrete.... 2 Other... 3 (Specify) 16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YEs-] IF NO. WIDTH MILLED SAME DEPTH AS TEST LANE (Feet)

	<u> </u>		·	· · · · · · · · · · · · · · · · · · ·	
D0 F0 A 0 F0	Klemine	EMPLOYER 5	URP/EULA	DATE //	1-191

17. COMMENTS _____

	<i>N</i> (	LEVEL-UP
	LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE [3 o] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 7]
1.	DATE LEVEL-UP LAYER APPLIED	[]
2.	PLACEMENT LOCATION OF LEVEL-UP LAYER Outside Rut 2 Both Ruts	3 Full Lane Width 4
3.	LENGTH OF TEST SECTION COVERED  Full Length of Test Section 1  Partial Length of Test Section 2 (enter st Outside Wheel Path Rut: Start Station + Inside Wheel Path Rut: Start Station +	art and end station numbers)  End Station +
4.	AVERAGE RUT DIMENSIONS (Inches) Outside Wheel Path Ru Inside Wheel Path Ru	
5.	RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-UNOne 1 Broomed 2 Broomed + A Asphaltic Tack Coat (only) 4 Wheel Path Milling 5 (specify, inch Other 6 (Specify)	sphaltic Tack Coat 3  des) DEPTH WIDTH
6.	COMPACTION EQUIPMENT None	ruck Tire 6
7.	TYPE OF LEVEL-UP MATERIAL  Hot Mix Asphalt Concrete 1 Plant Mix with  Plant Mix with Emulsified Asphalt, Cold Laid. 3  Road Mix with Emulsified Asphalt	Road Mix with Cutback Asphalt.
8.	MAXIMUM TOP SIZE AGGREGATE (Inches)	[
9.	MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING	G TO TRAFFIC (Hrs)
10.	MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENIN	NG (if used) (°F) [
11.	AIR TEMPERATURE DURING PLACEMENT OPERATIONS High Temperature (°F) Low Temperature (°F)	[
12.	PREDOMINATE ROAD SURFACE MOISTURE CONDITION DUI Dry 1 Moist 2 Wet	
	•	

employer *SHRP/EHWA* 

DATE 11/5/9/

	$\sim$	PATCHING
	LTPP-SPS CONSTRUCTION DATA  ASPHALT CONCRETE PATCHES  *	STATE CODE [3 0] SPS PROJECT CODE [0 5] TEST SECTION NO. [0 7]
1.	DATE PATCHING OPERATIONS BEGAN (Month-Day-Year)	[]
2.	DATE PATCHING OPERATIONS COMPLETED	[]
	PRIMARY DISTRESS OCCURRENCE PATCHED (code from Tab	
4.	SECONDARY DISTRESS OCCURRENCE PATCHED (code from TOTHER (Specify)	
5.	SUMMARY OF PATCHING  Surface Only  Surface and partial base replacement []  Full depth  []	TOTAL AREA (SQ. FT.) [] []
6.	METHOD USED TO DETERMINE LOCATION AND SIZES OF PAT Deflection 1 Coring 2 Visual Other 4 (specify)	3
7.	METHOD USED TO FORM PATCH BOUNDARIES  None 1 Saw Cut 2 Air Hammer 3  Other 5 (Specify)	Gold Milling 4
8.	COMPACTION EQUIPMENT None	ck lire o
9.	PATCH MATERIAL  Hot Mix Asphalt Concrete 1 Plant Mix with Cut Plant Mix with Emulsified Asphalt, Cold Laid. 3 Ro Road Mix with Emulsified Asphalt	oad Mix with Cutback Asphalt. 4 ortland Cement Concrete 6
10.	. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO	O TRAFFIC (Hrs) []
11.	. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING	(if used) (°F) []
12.	. AIR TEMPERATURE DURING PLACEMENT OPERATIONS High Temperature (°F) Low Temperature (°F)	[]
13.	. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURIN Dry 1 Moist 2 Wet	
PRE	EPARER Klemunes EMPLOYER SHRP FHI	NA DATE 11/5/91

LTPP-SPS CONSTRU PREPARATION OF MILLE CONSTRUCTION DA	* STATE C * SPS PRO * TEST SE	JECT CODE	[30] [0 5] [0 7]					
1. DATE OF MILLING OPERA	ATION .			[ <u>0</u> 9-0	7-91			
2. MANUFACTURER OF MILLI	ING MACHINE (Spec	ify)	Cn	7 <u>ナ</u>	<del></del>			
3. MILLING MACHINE MODE	L DESIGNATION (SI	pecify)	75	iO				
4. WIDTH OF CUTTING HEAD	(Inches)				(150			
5. TOTAL MILLED DEPTH (	Inches)							
Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average			
Inside lane edge	14.	_2.2	_ 1.9		[2.0]			
Outside lane edge	<b>⊥ 1</b> .	_ a.a	_2.0		[2.1]			
7. Estimate of exter  8. Height of Ridge 1  9. Other Comments?  Comments	Between Parallel	Passes? (In	area delamin nches) <i>Oclamina ta</i>	nated (Percen	t) [_0 [0			
10. WHERE PATCHES PLACE (If yes complete Co	D AFTER MILLING?	(Yes, No)	-		[ <u>10</u>			
11. LENGTH OF TIME MILL 12. WAS MILL REPLACEMEN 13. LAYER NUMBER OF MIL 14. NOMINAL THICKNESS O  15. TYPE OF MILL REPLAC "Virgin" Asphalt Co	T LAYER THICKER  L REPLACEMENT  F MILL REPLACEME  EMENT LAYER MATE  ncrete 1	THAN MILL D NT MATERIAL RIAL Recycled A	EPTH (YES,N (Inches) sphalt Conc	0) rete 2	[_ Q _ [_ 17 [_ a.0			
Other 3 (Specify)  16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]  IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) []								
IF NO, WIDTH MILLED  17. COMMENTS					` .			

	LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [30]  * SPS PROJECT CODE [05]  * TEST SECTION NO. [07]
		10 41
1.	SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLA None 1 Broomed 2 Broomed + As Asphaltic Tack Coat (only) 4	M-14
2.	TACK COAT Layer Numbers Material Type None 1 SS-1 2 SS-1H CRS-2 5 CMS-2 6 CMS-2H 7 CSS-1 Other 10 (Specify)	<u>O</u> <u>G</u> [O <u>B</u> ] [ <u>/ O</u> ] 3 CRS-1 4 [ <u>O</u> <u>O</u> ] 8 CSS-1H 9
3.	TACK COAT DILUTION (Percent)	Diluent TO Parts Asphalt
4.		
5.		### Company of the co
6.	MANUFACTURER OF ASPHALT CONCRETE PAVER	Blan-Knox
7.	MODEL DESIGNATION OF ASPHALT CONCRETE PAVER	220 1971
8.	SINGLE PASS LAYDOWN WIDTH (Feet)	Internaling SURFACE [22.0]
9.	AC BINDER COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inche Nominal Second Lift Placement Thickness (Inche	
	AC SURFACE COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inche Nominal Second Lift Placement Thickness (Inche	
11.	SURFACE FRICTION COURSE  Layer Number  Nominal Placement Thickness (Inches)	
12.	TEST SECTION STATION OF TRANSVERSE JOINTS (with Binder Course Surface Course Surface Friction Course	in test section)  [
13.	LOCATION OF LONGITUDINAL SURFACE JOINT Between lanes. 1 Within lane. 2 (specify of	fset from O/S feet) []
14.	SIGNIFICANT EVENTS DURING CONSTRUCTION (disruption)	ons, rain, equip. problems, etc.) FT Into the trench Setion

EMPLOYER <u>SHAP/F/IWA</u> DATE <u>11/5/9/</u> PREPARER Kemines

	0,	PP-SPS CONSTRUCTION VERLAY COMPACTION NSTRUCTION DATA SH	DATA		* S	STATE COD SPS PROJE	CT CODE	100 100 100 100 100 100 100 100 100 100	
1.	DATE P	AVING OPERATIONS I	BEGAN (Month-	Day-Year)				1 0 · 9 1 1 · 9 1	]
3.	LAYER	NUMBER				TREA		 [ <b>.7</b> ]	]
4.	MIXING	TEMPERATURE (*F)						(고) (로 오도.	
S.	Mea: Min	N TEMPERATURES (*Fnimum	<u>ये हुई</u>	Nur Mas	mber ( Kimum	of Tests		$\frac{3}{2}$	
	Roller Code #		Gross Wt T	re Press. (psi)		uency (Min)	Amplitude (Inches)	Speed (mph)	
10 11 12 13 14 15 16 17 18 19 20 21	B C D E F G H I J K L M N O P	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Outher							Both 2.5mph-VI 3.5mph-STA
_	COMPACT	ION DATA	First Lift	Second L	ift	Third L	ift Four	th Lift	
23 24	Coverag	Code (A-Q) es	IVIBR ISTAT M — a.					·	
25 26	INTERME Roller Coverag	Code (A-Q)		_		_		_	
27 28	FINAL Roller Coverage	Code (A-Q) es	I VIBE   STAT N. _ a.						
30	Compact	perature (°F) ed Thickness (In) Period (Days)	60 a 15 			  	··		
PRE	PARER _	Vemanes	EMPLOYER	SHRP/FHW	14	D.	ATE _11/5	/91	

	0	PP-SPS CONSTRUCTION VERLAY COMPACTION NSTRUCTION DATA SE	DATA		* STATE CO * SPS PROJ * TEST SEC	ECT CODE	[영영 [영 <b>건</b> ]	
1. 2.	DATE P	PAVING OPERATIONS (	BEGAN (Month-D	ay-Year)			0-91	]
3.	LAYER	NUMBER			I.	wter.	⊥ <u>+</u> + - [ <b>9</b> ]	1
4.	MIXING	TEMPERATURE (*F)					[원 <b>연 간</b> ]	
5.	Mea Min	N TEMPERATURES (°Inimum	<u> </u>	Numb Maxir	er of Tests			
	Roller Code #		I		Frequency Tibr./Min)	Amplitude (Inches)	Speed (mph)	
6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	B C D E F G H I J K L M N O P	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr.						Both 2.5mph-VI 3.5mph-sta
	COMPACT	TION DATA	First Lift	Second Lif	t Third I	Lift Four	th Lift	·
23 24	BREAKDO Roller Coverag	Code (A-Q)	IVIBR ISTAT M _ a.	· -		-		
25 26	INTERME Roller Coverag	Code (A-O)		-				
27	FINAL Roller Coverag	Code (A-Q) es	I VIBE   STAT N _ Q.					
30 l	Compact	perature (°F) ed Thickness (In) Period (Days)		— <u> </u>			 	

PREPARER Kemunes EMPLOYER 54RP FHus DATE 11/5/91

	0	PP-SPS CONSTRUCTION VERLAY COMPACTION NSTRUCTION DATA SH	DATA			CODE JECT CODE CCTION NO.	[30] [05] [07]	
1. 2.	DATE P	AVING OPERATIONS E	EGAN (Month-	Day-Year)		[-9-	1.9/	]
3.	LAYER	NUMBER				SURFACE	<del>_</del>	•
4.	MIXING	TEMPERATURE (*F)				₩ DETRE	-	
5.	LAYDOW	N TEMPERATURES (°F	' <b>)</b>				(월 9 5.	1
ROL	Mea Min	nimum imum ndard Deviation	<u>a 5 8</u> .	Num Max	ber of Test	is	:: <u>a</u> <u>7</u> <u>o</u>	·
	Roller Code #		Gross Wt T:	re Press.	Fraquency (Vibr./Min)			
6 7 8 9	B C D	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem						
11	F	Pneumatic-Tired Pneumatic-Tired	<u>: - -</u>					
12 13		Pneumatic-Tired Pneumatic-Tired						
14	I	Single-Drum Vibr.		,				
15 16	J K	Single-Drum Vibr. Single-Drum Vibr.				·   · — — -	-	
17	L	Single-Drum Vibr.	i i		<del></del> -	· ·	-	Both
18 19	M	Double-Drum Vibr. Double-Drum Vibr.						3.5mph-128
20	0	Double-Drum Vibr.	T 0.0			·   · — — –		3.5 mph-57#
21	P	Double-Drum Vibr.				·   · — — -		,
22	Q	Other						
	COMPACT	TION DATA	First Lift	Second L	ift Third	Lift For	urth Lift	
23	BREAKDO Roller Coverag	Code (A-Q)	IVIBR ISTAT M 				_	
25	INTERME Roller Coverag	Code (A-Q)						
27	FINAL Roller Coverag	Code (A-Q) es	I VIBE I STAT N.	_				
30	Compact	perature (°F) ed Thickness (In) Period (Days)	70			— — ·   — · —		
				·	<del> <u>-</u></del>	1		ł

PREPARER Klemungs EMPLOYER SHRP FHWA DATE 11/6/91

LTPP-SPS CONSTRUCTION DATA CONSTRUCTION QUALITY CONTROL MEASUREMENTS CONSTRUCTION DATA SHEET 9	* STATE CODE  * SPS PROJECT CODE  * TEST CECTION NO	[30]
CONSTRUCTION DATA SHEET 9	* TEST SECTION NO.	[ <u>o</u> <u>7</u> ]

### 1. NUCLEAR DENSITY MEASUREMENTS

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C) ¹		A.	A	A	
Rod Depth (Inches)		20	0.0	20	
Number of Measurements		_0_&	02	o a	
Average (pcf)		148.5	149.8	149.7	
Maximum (pcf)		148.8	149.7	149.9	D
Minimum (pcf)		118a	119.7	1495	MENSURPRANTAL A
Standard Deviation (pcf)					
Layer Number		07	09	1 1	

Minimum	1				
(pcf)	<u></u>	118.a	111.7	1495	MEASURMENT A
Standard Deviation					
(pcf)				<u>-</u>	
Layer Number		07	09	<u></u>	
¹ Measuremen	t Method Back	scatter A	Direct Transm	ission B	Air Gap C
2. MANUFACURI	ER OF NUCLEAR I	DENSITY GAUGE		_ TRO	XER
3. NUCLEAR D	ENSITY GAUGE MO	DEL NUMBER		_34	140
. NUCLEAR D	ENSITY GAUGE II	ENTIFICATION N	NUMBER	165	505
. NUCLEAR GA	AUGE COUNT RATE	FOR STANDARD	IZATION		3556_
. PROFILOGRA	APH MEASUREMENT	.s			
Profile :	raph Type ( Index (Inches/	(ile)			_
Height of	tation Method f Blanking Band eight (Inches)	Manual: 1 Me (Inches)	echanical 2 (	Computer., 3	
7. SURFACE P	ROFILE USED AS	BASIS OF INCEN	TIVE PAYMENT?	(YES, NO)	1/0

PREPARER Klemunes J. EMPLOYER SHEP FHWA DATE 11/5/91

* STATE CODE

* SPS PROJECT CODE * TEST SECTION NO.

[<u>3</u> <u>0</u>] [<u>0</u> <u>5</u>] [<u>0</u> <u>7</u>]

### LAYER THICKNESS MEASUREMENTS (Inches)

SHEET ___ OF ___

· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		, ————————————————————————————————————			
STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
Q+Ø Q		:			 	:_
Ω+5Ω	055 137 137 139 139 139 139 139 139 139 139 139 139				4154144 	:_
1+00	- I 의 의 의 의 의 의 의 의 의 의 의 의 의 의 의 의 의 의	:_ :_ :_			- 499671 - 499671	:_
1+50	-   기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기	:_			- 4 4 9 4 4 - 1 9 7 5 3	:_
<u>a+0</u> <u>o</u>	- 1950 - 775 - 775	;_ :_ _ : :			- 4 · 9 - 4 · 9 - 4 · 6 - 4 · 6 - 4 · 3	
ð.+ <u>5</u> Ω						:_ :_
3+06	- ISI SI		:-	:_	শ্ৰধ্ব	
LAYER NUMB	ER			<u> </u>		

PREPARER <u>Klemunes</u> EMPLOYER <u>SHAP/FHWA</u> DATE <u>11/5/9/</u>

* STATE CODE

* SPS PROJECT CODE

* TEST SECTION NO.

[<u>3</u> <u>0</u>] [<u>0</u> <u>5</u>] [<u>0</u> <u>7</u>]

# LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 2 of 2

	T		т			
STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+50	3 - 3 - 3 - 4 5 - 3 - 4 5 - 3 - 4 5 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3				4 0 6 0 9 	:-
4+ <u>0</u> 0			:_ :_		4/5/4/5/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4/4	
4+50					다 다 다 다 다 다 다 다 다 다 다 다 다 다 다 다 다 다 다	
5+00		:_ :_ :_	:_		44444 300003	:_
_+						
_+						:-
_+						: :
LAYER NUMBI	ER			<u> </u>		

PREPARER <u>Hemunes</u> EMPLOYER <u>SHAP FHWA</u> DATE <u>11/5/91</u>

LTPP-SPS CONSTRUCTION DA MISCELLANIOUS CONSTRUCTION NO CONSTRUCTION DATA SHEET	TES AND COMMENTS	* STATE CODE  * SPS PROJECT CODE  * TEST SECTION NO.	[3 <u>0</u> ] [0 <u>5</u> ] [ <u>0</u> <u>7</u> ]
Provide any miscellanious comme may have an influence on the ul- cause undesired performance dif- any quality control measuremen forms. Provide an indicatetion AASHTO, or Agency standard test	timate performance of ferences to occur be ts or data for which of the basis for such designation.	of the test sections of tween test sections. An space is not provide the measurements, such	r which may lso include ed on other as an ASTM,
Rod AND Level S AFTER CONSTRUCTION Lethoca Lifts	TURINGS here	completed beso	RE AND
AFTER CONSTRUCTION	ow. NO MASS	coments were	faka)
between Lists			
		<del></del>	<del></del>
	,		
· · · · · · · · · · · · · · · · · · ·			<del></del>
			<del> </del>
			<del>,</del>
	·		
		,	, /
PREPARER <u>klemunes</u>	EMPLOYER 5/1890/	Mars DATE 11/1	15/91

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2 * STATE CODE

[30]

* SPS PROJECT CODE * TEST SECTION NO.

[<u>05]</u>

1.LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE	4. LAYER THICKNESSES (Inches)					
NUMBER	DESCRIPTION	CLASS	AVERAGE	MINIMUM	MAXIMUM	STD. DEV.		
1	SUBGRADE(7)	[ <u>6</u> <u>a</u> ]	Salle State &	ai dua				
2	[06]	िए छ।	[_14.5]	·-				
3	[0 5]	[ <b>3 3</b> ]	[4a5]		· <del>-</del>			
4	(03)	( <u>0 L</u> )	[3.75]					
5	[09]	[Q a]	[Q.Ø]					
6	( <u>o</u> a)	[8 6]	[Q]]					
7	(ठ म)	[13]	[9.0]	·-	 			
8	(ठ व)	[86]	[Q.1]					
9	[ <u>0</u> <u>1</u> ]	[ <u>/ 3</u> ]	[a.o]					
10	(aa)	[ <u>A</u> 6]	[a.1]					
11	10 11	[1 3]	[3.0]					
12	[]	[]	[ ]					
13	[]	[]	[ ]					
14	[]	[]	[ ]	,-				
15	[]	[]	[ ]			<u> </u>		

#### NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.

Layer description codes:

If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.

- 3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.
- 4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER Kemuns

EMPLOYER SHRP/FHWA

DATE _//5/9/

LTPP-SPS CONSTRUCTION DATA

PRE-OVERLAY SURFACE PREPARATION SKETCH

CONSTRUCTION DATA SHEET 3

* STATE CODE

* SPS PROJECT CODE

* TEST SECTION NO.

	NO	patching
	LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 8]
1.	DATE PATCHING OPERATIONS BEGAN (Month-Day-Year)	[]
2.	DATE PATCHING OPERATIONS COMPLETED	[],
3.	PRIMARY DISTRESS OCCURRENCE PATCHED (code from Other (Specify)	
4.	SECONDARY DISTRESS OCCURRENCE PATCHED (code fro	
5.	SUMMARY OF PATCHING Surface Only Surface and partial base replacement Full depth  NUMBER  []  []	TOTAL AREA (SQ. FT.) [ ] [ ]
6.	METHOD USED TO DETERMINE LOCATION AND SIZES OF Deflection 1 Coring 2 Visual Other 4 (specify)	3
7.	METHOD USED TO FORM PATCH BOUNDARIES None 1 Saw Gut 2 Air Hammer Other 5 (Specify)	[_] 3 Cold Milling 4
8.	COMPACTION EQUIPMENT None	Iruck Tire 6
9.	PATCH MATERIAL  Hot Mix Asphalt Concrete 1 Plant Mix with Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Emulsified Asphalt	Road Mix with Cutback Asphalt. 4 5 Portland Cement Concrete 6
10.	MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENIN	G TO TRAFFIC (Hrs) []
11.	MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENI	NG (if used) (*F) []
12.	AIR TEMPERATURE DURING PLACEMENT OPERATIONS High Temperature (°F) Low Temperature (°F)	[]
13.	PREDOMINATE ROAD SURFACE MOISTURE CONDITION DU Dry 1 Moist 2 Wet	
785	PARER Klemunes EMPLOYER SHRP /	

	NO	level-up
	LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE $[3 \ 0]$ * SPS PROJECT CODE $[0 \ 5]$ * TEST SECTION NO. $[0 \ 8]$
1.	DATE LEVEL-UP LAYER APPLIED	[]
2.	PLACEMENT LOCATION OF LEVEL-UP LAYER Outside Rut 1 Inside Rut 2 Both Ruts	3 Full Lane Width 4
3.	LENGTH OF TEST SECTION COVERED  Full Length of Test Section 1  Partial Length of Test Section 2 (enter st  Outside Wheel Path Rut: Start Station +  Inside Wheel Path Rut: Start Station +	
4.	AVERAGE RUT DIMENSIONS (Inches) Outside Wheel Path Ru Inside Wheel Path Ru	·— ·— ·— ·— <i>—</i> ·
5.	RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-U None 1 Broomed 2 Broomed + A Asphaltic Tack Coat (only) 4 Wheel Path Milling 5 (specify, inch Other 6 (Specify)	sphaltic Tack Coat 3 es) DEPTH WIDTH
6.	COMPACTION EQUIPMENT None	Tuck Tile
7.	TYPE OF LEVEL-UP MATERIAL  Hot Mix Asphalt Concrete 1 Plant Mix with  Plant Mix with Emulsified Asphalt, Cold Laid. 3  Road Mix with Emulsified Asphalt	Road Mix with Cutback Asphalt. 4
8.	MAXIMUM TOP SIZE AGGREGATE (Inches)	[]
9.	MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING	G TO TRAFFIC (Hrs) []
10.	MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENIN	NG (if used) (°F) []
11.	AIR TEMPERATURE DURING PLACEMENT OPERATIONS High Temperature (°F) Low Temperature (°F)	[]
12.	PREDOMINATE ROAD SURFACE MOISTURE CONDITION DUE Dry 1 Moist 2 Wet	

PREPARER Kemunes EMPLOYER SHRP/FHWA DATE 11/5/91

	PREPARATION OF MILLE	ARATION OF MILLED TEST SECTIONS			ODE JECT CODE CTION NO.	[30] [05] [08]			
1.	DATE OF MILLING OPERA	ATION .			109-0	7-9 L			
2.	MANUFACTURER OF MILLI	ING MACHINE (Spec	cify)		MI	<u>.</u>			
3.	MILLING MACHINE MODE	L DESIGNATION (S	pecify) _		50				
4.	WIDTH OF CUTTING HEAD	(Inches)				[150]			
5.	TOTAL MILLED DEPTH (	Inches)							
	Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average			
	Inside lane edge	11.	_a.a	<u>_ a</u> .o		[A·O]			
	Outside lane edge	11.	_ a.a	_ a.o		(a.L)			
MI	LLED SURFACE CHARACTER  6. Macro Texture  Fine Macro Text	RISTICS ure (≤¼ inch)	1 Coarse	e Macro Tex	ture(>¼ inch)	2 []			
	7. Estimate of exten	nt of test section	on surface a	area delami	nated (Percen	t) [_ <b>Q</b> ]			
	8. Height of Ridge	Between Parallel	Passes? (In	nches)		[ <b>_</b> - <b>_0</b> ]			
	9. Other Comments? Comments		about 15 Very NE	lo Delan	nimtou of A	[ <u>YES]</u> Noot			
10	. WHERE PATCHES PLACE (If yes complete Co		-			[10]			
12 13	. LENGTH OF TIME MILL . WAS MILL REPLACEMEN . LAYER NUMBER OF MIL . NOMINAL THICKNESS O	T LAYER THICKER L REPLACEMENT	THAN MILL D	EPTH (YES,N	•	[_Q_] [_ov_] [_] [_a.e]			
15	. TYPE OF MILL REPLAC "Virgin" Asphalt Co Other 3 (Specify	ncrete1	Recycled A			( <u>a</u> )			
16	. WAS ADJACENT TRAVEL IF NO, WIDTH MILLED	LANE MILLED TO SAME DEPTH AS T	SAME DEPTH EST LANE (F	AS TEST LAN eet)	E? (Yes, No)	[ <u>  [   [   5                           </u>			
17	. COMMENTS								
	· .								
_	· .		<del></del>	····		<del></del>			
	•					<del></del>			
P	reparer <u>Klemune</u>	EMPLOY	er <i>5HRP/</i>	) EHWA	DATE//	5/91			

	LTPP-SPS CONSTRUCTION OF MILLES CONSTRUCTION DA	D TEST SECTIONS		* STATE CO * SPS PROJ * TEST SEC	FECT CODE	[0 8] [0 2]			
1.	DATE OF MILLING OPERA	ATION .			109-0	3-911			
2.	MANUFACTURER OF MILLI	ING MACHINE (Spec	ify) _	Cn	7 <i>T</i>				
3.	MILLING MACHINE MODEL	L DESIGNATION (Sp	ecify) _	100	20				
4.	WIDTH OF CUTTING HEAD	(Inches)				(150)			
5.	TOTAL MILLED DEPTH (	Inches)							
	Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average			
	Inside lane edge	— —·				[96]			
	Outside lane edge					[96]			
MI	LED SURFACE CHARACTE  6. Macro Texture Fine Macro Text  7. Estimate of exte  8. Height of Ridge	ure (≤k inch) nt of test secti	on surface	area delami					
	9. Other Comments? Comments	(Yes, No)				[NO]			
10	. WHERE PATCHES PLACE (If yes complete Co				•	[_10]			
12 13 14	LENGTH OF TIME MILL WAS MILL REPLACEMEN LAYER NUMBER OF MIL NOMINAL THICKNESS OF TYPE OF MILL REPLACE "Virgin" Asphalt Co	IT LAYER THICKER LL REPLACEMENT OF MILL REPLACEMENT DEMENT LAYER MATE OTHER TENTON	THAN MILL D INT MATERIAL IRIAL Recycled A	EPTH (YES,N . (Inches) Asphalt Cond	crete 2	[_48] [_NA_] [5] [_0]			
	Other 3 (Specify)  16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]  IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) []  17. COMMENTS								
	PREPARER Klemung	EMPLO	•			/5/9/			

	LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS	* STATE CODE [30] * SPS PROJECT CODE [05]
L.	CONSTRUCTION DATA SHEET 7	* TEST SECTION NO. [Q A]
1.	SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLA None 1 Broomed 2 Broomed + As Asphaltic Tack Coat (only) 4	
2.	TACK COAT Layer Numbers Material Type None 1 SS-1 2 SS-1H CRS-2 5 CMS-2 6 CMS-2H 7 CSS-1 Other 10 (Specify)	3 CRS-1 4 [Q Q] 8 CSS-1H 9
3.	TACK COAT DILUTION (Percent)	Diluent TO Parts Asphalt
4.	TACK COAT APPLICATION RATE (Gal/Sq. Yd.)	_ (Q · 1 ¬
	ASPHALT CONCRETE PLANT AND HAUL  Type Name Haul Distance Plant 1 [5] Sping 400 [ 4 Plant 2 [ ] [ 4 Plant 3 [ ] [ 4 Plant Type: Batch 1 Drum Mix 2.00	
6.	MANUFACTURER OF ASPHALT CONCRETE PAVER	Blaw-knox
7.	MODEL DESIGNATION OF ASPHALT CONCRETE PAVER	220 1971
8.	SINGLE PASS LAYDOWN WIDTH (Feet)	TATERMEDIATE, SURTALE [00.0]
9.	AC BINDER COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inches Nominal Second Lift Placement Thickness (Inc	
10.	AC SURFACE COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inches Nominal Second Lift Placement Thickness (In	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
11.	SURFACE FRICTION COURSE Layer Number Nominal Placement Thickness (Inches)	
12.	TEST SECTION STATION OF TRANSVERSE JOINTS (with Binder Course Surface Course Surface Friction Course	in test section) [ +] [_ +] [_ +]
13.	LOCATION OF LONGITUDINAL SURFACE JOINT Between lanes. 1 Within lane. 2 (specify of	[] fset from O/S feet) []
14.	SIGNIFICANT EVENTS DURING CONSTRUCTION(disrupti	ons, rain, equip. problems, etc.)
PR	EPARER Klemungs EMPLOYER SHRP/	F414 DATE 11/5/91

	0	PP-SPS CONSTRUCTIO VERLAY COMPACTION NSTRUCTION DATA SH	DATA	*	STATE CODE SPS PROJECT TEST SECTION	CODE N NO.	300 300 300 300 300 300 300 300 300 300	
1. 2.	DATE P	AVING OPERATIONS E	SEGAN (Month-)	Day-Year)	[		0-91 a-91	]
3.	LAYER	NUMBER				TREACH	[7]	•
4.	MIXING	TEMPERATURE (°F)				•	_	
5.	Mea Min Sta LLER DAT		d 5 7.	Number Maximu	of Tests		9 E 8 - 3	
	Roller Code #		Gross Wt Ti			plitude Inches)	Speed (mph)	
	F G H I J K L M N O P	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Oouble-Drum Vibr. Oouble-Drum Vibr.	:					Both 2.5mph-VII 3.5mph-STA
	COMPACT	ION DATA	First Lift	Second Lift	Third Lift	Fourt	h Lift	
23 24	BREAKDO Roller Coverag	Code (A-Q)	IVIBR ISTAT M — Q.			-		,
25 26	INTERME Roller Coverag	Code (A-O)						
27 28	FINAL Roller Coverag	Code (A-Q) es	I VIBL   STAT N _ 2.			-		
30	Compact	perature (°F) ed Thickness (In) Period (Days)						

PREPARER Kemunies EMPLOYER SHRP/FHWA DATE 11/5/91

	01	PP-SPS CONSTRUCTION VERLAY COMPACTION NSTRUCTION DATA SH	DATA	*	STATE COD SPS PROJE TEST SECT	CT CODE	[이용] [이상]	
1. 2.	DATE P	AVING OPERATIONS I	BEGAN (Month-D				7-61	]
3.	LAYER	NUMBER				Twee RM	ediate [9]	,i
4.	MIXING	TEMPERATURE (°F)					-	·
5,	LAYDOW	N TEMPERATURES (°F	· ') _			ŀ	<u> </u>	1
RO	11111	nimumndard Deviation	a = a	Number Maximur	of Tests	• • • • • • • • • • • • • • • • • • • •	2 <u>5</u> 2	·
	Roller Code #	Roller Description	1 /	re Press. Fre	equency or./Min)	Amplitude (Inches)	Speed (mph)	
;	E F G H I J K L M N O P	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Other						Both 2.5mph-VIEF 3.5mph-STAT
	COMPACT	ION DATA	First Lift	Second Lift	Third L	ift Four	th Lift	
23 24	BREAKDO Roller Coverag	Code (A-O)	IVIBR ISTAT M.				— ·	
25 26	INTERME Roller Coverag	Code (A-O)						
27 28	FINAL Roller Coverag	Code (A-Q) es	IVIBE ISTAT N _ 2.					
30	Compact	perature (°F) ed Thickness (In) Period (Days)	2 <u>5</u> 					

PREPARER Klemunes EMPLOYER SHAP FHLA DATE 11/5/91

	Ο,	PP-SPS CONSTRUCTION VERLAY COMPACTION NSTRUCTION DATA SH	DATA		* STATE COI * SPS PROJ * TEST SEC	ECT CODE	[0] [0] [3] [3]	
1. 2.	DATE P	AVING OPERATIONS E	EGAN (Month	-Day-Year)			2 9 / 2 9 1	
3.	LAYER	NUMBER	•			SURFAC	_	1
4.	MIXING	TEMPERATURE (*F)					(77.)	
5.	LAYDOW	N TEMPERATURES (°F				Ĺ	<u> </u>	<u> </u>
ROL	Mea Min Sta LER DAT	nimumndard Deviation	<u></u>	Numb Maxi	er of Tests	••••••••••	a <u>5</u> 3	
	Roller Code #		Gross Wt 7		Frequency Vibr./Min)	Amplitude (Inches)	Speed (mph)	
6 7 8	В	Steel-Whl Tandem Steel-Whl Tandem	:_					
9	D	Steel-Whl Tandem Steel-Whl Tandem	:-					
10 11		Pneumatic-Tired Pneumatic-Tired						
12	G	Pneumatic-Tired	-	·				
13	1	Pneumatic-Tired		:				
14 15		Single-Drum Vibr.					**************	
16		Single-Drum Vibr. Single-Drum Vibr.	⁻	_			·_	
17	L	Single-Drum Vibr.		-		·		Both
18 19		Double-Drum Vibr.	<u> </u>		<del></del> ·	·	·	
20	1 1	Double-Drum Vibr. Double-Drum Vibr.	1 a.a				`_ `	3.5mph-VIER 3.5mph-STAT
21	P	Double-Drum Vibr.	:_	_		·		<i>52</i>
22	Q	Other						
	COMPACT	CION DATA	First Lift	Second Li	t Third	Lift Four	th Lift	
23 24	BREAKDO Roller Coverag	Code (A-Q)	I VIBR I STAT M — Q.				_	
25 26	INTERME Roller Coverag	Code (A-Q)						
	FINAL		1 VIBE					
27 28	Roller Coverag	Code (A-Q)	1 этет <u>N</u> _ а,					
30	Compact	perature (°F) ed Thickness (In) Period (Days)	75					
	<u> </u>					- '		

PREPARER Klemunes EMPLOYER SHRP FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA
CONSTRUCTION QUALITY CONTROL MEASUREMENTS
CONSTRUCTION DATA SHEET 9

* STATE CODE

130

* SPS PROJECT CODE * TEST SECTION NO.

S 2

### 1. NUCLEAR DENSITY MEASUREMENTS

			•	·		
LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer	
Measurement Method (A, B, C) ¹		A	A	A		
Rod Depth (Inches)		q	00	20		
Number of Measurements		29	o a	مع	· 	
Average (pcf)		149.3	147.7	147.6		
Maximum (pcf)		149.4	148.0	147.9		
Minimum (pcf)		1190	147.4	111.2		
Standard Deviation (pcf)						
Layer Number		07	09	44		
¹Measurement Method Backscatter A Direct Transmission B Air						

_		
1	Measurement Method Backscatter A Direct Transmission	n B Air Gap C
2.	MANUFACURER OF NUCLEAR DENSITY GAUGE	TROXER
3.	NUCLEAR DENSITY GAUGE MODEL NUMBER	3440
<b>4</b> .	NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER	16505
5.	NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION	3556_
5.	PROFILOGRAPH MEASUREMENTS	
	Profilograph Type California 1 Rainhart 2 Profile Index (Inches/Mile) Interpretation Method Manual 1 Mechanical 2 Comput Height of Blanking Band (Inches) Cutoff Height (Inches)	er 3
7.	SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES,	NO) AC

PREPARER Klemunes

employer <u>SARP/FHWA</u>

DATE 11/5/9/

* STATE CODE

* SPS PROJECT CODE

* TEST SECTION NO.

[30] [05] [08]

## LAYER THICKNESS MEASUREMENTS (Inches)

SHEET ___ OF ___

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
C+Q O	- S - 3 - 7 - 4 5 - 4 5		:	:- :- :-	-	
2+ <u>5</u> <u>0</u>			: - : - : -			: :
L+ <u>©</u> a					5,607.15,60 1 4 4 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	:
L+50	- 37 - 37 - 77 - 15 - 15 - 10	:_ :_ :_			4144144 	
<u>a</u> +20		:_			4/5/4/5/4/5/4/5/4/5/4/5/4/5/4/5/4/5/4/5	
a+5.0						
3-00					477793	
LAYER NUMBI	ER				11	

PREPARER Kemunes EMPLOYER SUPPLEMENT DATE 1-14-92

* STATE CODE

* SPS PROJECT CODE * TEST SECTION NO.

[30] [05] [08]

# LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 2 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+50			: : :	:- :- :-	- 4 7 G G G	
4+00	- 14745 14745 196000				36777Q	:_
4+50	- 37 - 37 - 7 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1				21744 1444 1 - 1 - 1	:_
5+00	3 <u>_7</u> 3 <u>_7</u> /4 /4	:_ :_	: :		4154454 111111	: - : - : - : -
_+					:_ :_	
_+						
_+						:_
LAYER NUMBER						

PREPARER Konunes EMPLOYER SURP/F4WA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS	* STATE CODE * SPS PROJECT CODE	[ <u>3 0]</u> [ <u>0</u> <u>5</u> ]
CONSTRUCTION DATA SHEET 11	* TEST SECTION NO.	[ <u>0</u> 8]

Provide any miscellanious comments and notes concering construction operations which

may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indicatetion of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation. ROD & Level Surveys were completed before and after construction. Megazements were not taken

PREPARER Klemunes EMPLOYER SHEP/FHAA DATE 1/18-92

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2 * STATE CODE

كذا

* SPS PROJECT CODE

05

* TEST SECTION NO.

1.LAYER NUMBER			4. ]	AYER THICE	(NESSES (In	ches)
Noribea	DESCRIPTION	CLASS	AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[ <b>E</b> St]	All Marie College	n discus		
2	[0 E]	[हरी	[_14.5]			
3	[ <u>0</u> 5]	[छ छ।	[4a5]			
4	[ <u>0</u> 3]	で丁)	[3.75]			
5	1021	[진정]	[Q.0]		   · -	
6	(ठ व)	(BE)	[Q.]]			
7	[2]	[13]	[_a.o]		'-	
8	[O B]	[36]	[Q.]]			
9	[0 1]	[13]	[_a.ø]			
10	[]	[]	[ ]			
11	[]	[]	[ ]			
12	[]	[]	[ ]			
13	[]	()	[]			
14	[]	[]	[]			
15	[]	[]	[,_]			

### NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.

Layer description codes:

HMAC Layer (Subsurface).04 Interlayer......08

If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.

3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.

4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER KIEMINES

employer SAR FANA

October 1990

LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3	* STATE CODE * SPS PROJECT CODE * TEST SECTION NO.	] ]
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PREPARER _	 EMPLOYER	 DATE _	

	NO D	Atching-
	LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE []  * SPS PROJECT CODE []  * TEST SECTION NO. []
1.	DATE PATCHING OPERATIONS BEGAN (Month-Day-Ye	ar) []
2.	DATE PATCHING OPERATIONS COMPLETED	[]
3.	PRIMARY DISTRESS OCCURRENCE PATCHED (code fr Other (Specify)	
4.	SECONDARY DISTRESS OCCURRENCE PATCHED (code Other (Specify)	
5.	SUMMARY OF PATCHING Surface Only Surface and partial base replacement Full depth  NUMBER  [	
6.	METHOD USED TO DETERMINE LOCATION AND SIZES Deflection 1 Coring 2 Visual Other 4 (specify)	3
7.	METHOD USED TO FORM PATCH BOUNDARIES None 1 Saw Cut 2 Air Hammer Other 5 (Specify)	3 Cold Milling 4
8.	COMPACTION EQUIPMENT None	Truck Tire
9.	PATCH MATERIAL  Hot Mix Asphalt Concrete 1 Plant Mix wi Plant Mix with Emulsified Asphalt, Cold Laid Road Mix with Emulsified Asphalt	<ol> <li>3 Road Mix with Cutback Asphalt. 4</li> <li>5 Portland Cement Concrete 6</li> </ol>
10.	MINIMUM TIME FROM MATERIAL PLACEMENT TO OPE	NING TO TRAFFIC (Hrs) []
11.	MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OP	ENING (if used) (°F) []
12.	AIR TEMPERATURE DURING PLACEMENT OPERATIONS High Temperature (°F) Low Temperature (°F)	[]
13.	PREDOMINATE ROAD SURFACE MOISTURE CONDITION Dry 1 Moist 2 Wet	DURING PLACEMENT OPERATIONS [_] 3
ם פק	PARER EMPLOYER	DATE

		Level-up
	LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE []  * SPS PROJECT CODE []  * TEST SECTION NO. []
1.	DATE LEVEL-UP LAYER APPLIED	[]
	PLACEMENT LOCATION OF LEVEL-UP LAYER Outside Rut 1 Inside Rut 2 Both Rut	[] s 3 Full Lane Width 4
3.	LENGTH OF TEST SECTION COVERED  Full Length of Test Section 1  Partial Length of Test Section 2 (enter Outside Wheel Path Rut: Start Station Inside Wheel Path Rut: Start Station	
4.	AVERAGE RUT DIMENSIONS (Inches) Outside Wheel Path Inside Wheel Path	
5.	RUT PREPARATION PRIOR TO APPLICATION OF LEVE None 1 Broomed 2 Broomed Asphaltic Tack Coat (only) 4 Wheel Path Milling 5 (specify, i Other 6 (Specify)	+ Asphaltic Tack Coat 3  inches) DEPTH WIDTH
6.	COMPACTION EQUIPMENT None	5 Truck Tire 6
7.	TYPE OF LEVEL-UP MATERIAL  Hot Mix Asphalt Concrete 1 Plant Mix wi Plant Mix with Emulsified Asphalt, Cold Laid Road Mix with Emulsified Asphalt  Other 6 (Specify)	1. 3 Road Mix with Cutback Asphalt.
8.	MAXIMUM TOP SIZE AGGREGATE (Inches)	[
9.	MINIMUM TIME FROM MATERIAL PLACEMENT TO OPE	NING TO TRAFFIC (Hrs) [
10.	MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OP	ENING (if used) (°F) [
11.	AIR TEMPERATURE DURING PLACEMENT OPERATIONS High Temperature (°F) Low Temperature (°F)	[
12.	PREDOMINATE ROAD SURFACE MOISTURE CONDITION Dry 1 Moist 2 Wet	
		-
ם סם	PAREREMPLOYER	DATE

PREPARATION OF MILLI CONSTRUCTION DA	ED TEST SECTIONS	* STATE CO * SPS PROJ * TEST SEC		[0 3] [3 0]					
L. DATE OF MILLING OPERATION . [Q9-1 Q-9 L]									
2. MANUFACTURER OF MILI	ING MACHINE (Spec	ify) _	<u>Cm</u>	<u> </u>					
3. MILLING MACHINE MODE	L DESIGNATION (Sp	pecify) _	1000	7	·				
4. WIDTH OF CUTTING HE	D (Inches)			İ	[150]				
5. TOTAL MILLED DEPTH	(Inches)								
Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average				
Inside lane edge					[94]				
Outside lane edge					[96]				
MILLED SURFACE CHARACT 6. Macro Texture Fine Macro Tex	ERISTICS ture (≤¼ inch)	1 Coars	e Macro Tex	cure(>k inch)	2 [1]				
7. Estimate of ext	ent of test secti	on surface	area delami:	nated (Percen	(_ Q]				
8. Height of Ridge	Between Parallel	. Passes? (I	nches)		[ <u>0</u> ]				
9. Other Comments? Comments	(Yes, No)		·		[ <u>vo</u> ]				
10. WHERE PATCHES PLAC					[10]				
11. LENGTH OF TIME MIN 12. WAS MILL REPLACENT 13. LAYER NUMBER OF MIN 14. NOMINAL THICKNESS	int layer thicker Ill replacement	THAN MILL I	EPTH (YES,	10)	[_48] [_NA] [5] [_Q]				
15. TYPE OF MILL REPL "Virgin" Asphalt Other 3 (Speci	Concrete 1	Recycled A			[නු]				
16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]  IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) []									
17. COMMENTS									
	· ·		· —————						
PREPARER Hemone	S EMPLO	oyer <i><u>JHR</u>F</i>	JEHRA	DATE _//	<u>/5/9/</u>				

	LTPP-SPS CONSTRU PREPARATION OF MILLE CONSTRUCTION DA	D TEST SECTIONS	* STATE C * SPS PRO * TEST SE	JECT CODE	30 30 30 30 30 30 30 30 30 30 30 30 30 3					
1.	DATE OF MILLING OPERA	ATION .			109-0	7-9 L1				
2.	MANUFACTURER OF MILLI	ING MACHINE (Spec	ify) _	Cn	1I					
3.	MILLING MACHINE MODE	L DESIGNATION (Sp	ecify) _	7.5	<u> </u>					
4.	WIDTH OF CUTTING HEAD	(Inches)				[15a]				
5.	TOTAL MILLED DEPTH (	Inches)								
	Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average				
	Inside lane edge	11.	_ a.o	— T·₽		[a.o]				
	Outside lane edge	11	_a.3	_ a.o		[중.0]				
MII	LLED SURFACE CHARACTER  6. Macro Texture Fine Macro Texture  7. Estimate of external	ure (≤% inch)								
	8. Height of Ridge				nated (Telten	[ <u>Q</u> ]				
	9. Other Comments? Comments	(Yes, No)	AhouT K	7% Gelam	ination of A	[ <u>YE5</u> ]				
10	. WHERE PATCHES PLACE (If yes complete Co					[_01_]				
12 13	LENGTH OF TIME MILL WAS MILL REPLACEMEN LAYER NUMBER OF MIL NOMINAL THICKNESS O	T LAYER THICKER THE REPLACEMENT	THAN MILL D	EPTH (YES,N	0)	[_ 0 _] [_ ~0 ] [_ a.0]				
15	15. TYPE OF MILL REPLACEMENT LAYER MATERIAL  "Virgin" Asphalt Concrete 1 Recycled Asphalt Concrete 2  Other 3 (Specify)									
16	. WAS ADJACENT TRAVEL IF NO, WIDTH MILLED	LANE MILLED TO SAME DEPTH AS T	SAME DEPTH EST LANE (F	AS TEST LAN eet)	E? (Yes, No)	[ <u>}</u> []				
17	17. COMMENTS									
	· .									
						_ <del></del>				
PI	REPARER & Remunes	· EMPLOY	ER <i>=USP !</i>	EUM	DATE //	/91				

•		LIPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [30]  * SPS PROJECT CODE [05]  * TEST SECTION NO. [09]
	1.	SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLA None 1 Broomed 2 Broomed + As Asphaltic Tack Coat (only) 4	\ <u>~~</u> i
•	2.	TACK COAT Layer Numbers Material Type None 1 SS-1 2 SS-1H CRS-2 5 CMS-2 6 CMS-2H 7 CSS-1	
			Diluent TO Parts Asphalt
			[Q·] ce (Mi) Time (Min) Layer Numbers
		Plant 1 [3]       Aceing 400 contrad       4         Plant 2 [ ]       [         Plant 3 [ ]       [         Plant Type:       Batch 1 Drum Mix 2 .00	
	6.	MANUFACTURER OF ASPHALT CONCRETE PAVER	BLAW - KNOX
	7.	MODEL DESIGNATION OF ASPHALT CONCRETE PAVER	200 1971
	8.	•	Intermediate, Surface [22.0]
	9.	AC BINDER COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inches	
	10.	Nominal Second Lift Placement Thickness (Inche AC SURFACE COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inche	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	11.	Nominal Second Lift Placement Thickness (Inche SURFACE FRICTION COURSE Layer Number Nominal Placement Thickness (Inches)	
	12.	TEST SECTION STATION OF TRANSVERSE JOINTS (with Binder Course Surface Course Surface Friction Course	in test section) [ +] [_ +]
	13.	LOCATION OF LONGITUDINAL SURFACE JOINT Between lanes 1 Within lane 2 (specify of	fset from O/S feet) []
	14.	SIGNIFICANT EVENTS DURING CONSTRUCTION(disrupti	ons, rain, equip. problems, etc.)
	PR	EPARER Klenymes Employer SHEF	FHWA DATE 11/5/91
		<del></del>	

	CO:	PP-SPS CONSTRUCTION VERLAY COMPACTION NSTRUCTION DATA SH	DATA EET 8		* SP	ATE CODE S PROJECT ST SECTION	CODE N NO.	일 일 일 일 일 일 일 일 일 일 일 일 일 일 일 일 일 일 일	
	1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year)  2. DATE PAVING OPERATIONS COMPLETED  [								
3.	LAYER	NUMBER					THEN		
4.	MIXING	TEMPERATURE (*F)					(	평 <b>6 2</b> .	· 1
5.	Mea Min	N TEMPERATURES (°F nimumndard Deviation	<u>व</u> इ ०	Nur Mas	mber of Kimum	Tests		2 E 7	·
	Roller Code #		Gross Wt Ti	re Press. (psi)	Frequ (Vibr.		plitude Inches)	Speed (mph)	
	F G H I J K L M N O P Q	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Oother						** : :	Both 2.5mph-VIE# 3.5mph-5TAT
		CION DATA	First Lift	Second L	ift :	Third Lif	t Four	th Lift	
23	Coverag	Code (A-Q) ses	IVIBR ISTAT M — a.			_	-		·
25 26	INTERME Roller Coverag	Code (A-Q)				_		_	·
28	Coverag		I VIBE I STAT N — 2.						
30	Compact	perature (°F) ed Thickness (In) Period (Days)	_ 70 		· ·				
PRI	EPARER	Klemunes	<b>EMPLOYER</b>	54RP/FH	WA	DATI	11/5	/91	-

	LTPP-SPS CONSTRUCTION DATA	ON DATA	* :	STATE CODE SPS PROJECT CO TEST SECTION 1				
1. 2.	. DATE PAVING OPERATIONS BEGAN (Month-Day-Vear)							
3.	LAYER NUMBER	·			TURFACE 19			
4.	MIXING TEMPERATURE (	'F)			( <u>3</u> 9 5			
5.	LAYDOWN TEMPERATURES  Mean  Minimum  Standard Deviation  LLER DATA	= = =	Number Maximum	of Tests		3. 1.		
	Roller Roller Code # Description	Gross Wt Ti			itude Speed (mph)			
	Pneumatic-Tire Pneumatic-Tire Pneumatic-Tire Pneumatic-Tire I Single-Drum Vi Single-Drum Vi Single-Drum Vi N Double-Drum Vi Double-Drum Vi Double-Drum Vi Double-Drum Vi	lem				Both 2.5mph-VIE. 3.5mph-57A		
	COMPACTION DATA	First Lift	Second Lift			_		
23	BREAKDOWN Roller Code (A-Q) Coverages	IVIBR ISTAT M — A.		Third Lift	Fourth Lift			
25 26	INTERMEDIATE Roller Code (A-Q) Coverages				_			
28	FINAL Roller Code (A-Q) Coverages	I VIBE I STAT <u>N</u> _ Q.						
30	Air Temperature (°F) Compacted Thickness ( Curing Period (Days)	In)						

PREPARER Kemunes EMPLOYER SHRP/FHWA DATE 11-5-91

L	TPP-SPS	CONSTR	UCTION	DATA	
CONSTR	UCTION	QUALITY	CONTRO	OL MEAS	UREMENTS
	CONSTRU	CTION D	ATA SH	EET 9	

* STATE CODE

* SPS PROJECT CODE * TEST SECTION NO.

[30] [05] [09]

### 1. NUCLEAR DENSITY MEASUREMENTS

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer		
Measurement Method (A, B, C) ¹		<u>A</u>		A			
Rod Depth (Inches)		90		00			
Number of Measurements		<u>ं</u> व		00			
Average (pcf)		149.2		1459	<u></u>		
Maximum (pcf)		<u> </u>	·	145.9			
Minimum (pcf)		148.2		145.8	<u> </u>		
Standard Deviation (pcf)							
Layer Number		27		09			
¹ Measurement Method Backscatter A Direct Transmission B Air Gap C  2. MANUFACURER OF NUCLEAR DENSITY GAUGE  TROXICE							
NICLEAR DENSITY CALICE MODEL NUMBER							

2.	MANUFACURER OF NUCLEAR DENSITY GAUGE	KOXRE
3.	NUCLEAR DENSITY GAUGE MODEL NUMBER	3440
4.	NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER	16505
5.	NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION	3556_
6.	PROFILOGRAPH MEASUREMENTS	
	Profilograph Type California 1 Rainhart 2 Profile Index (Inches/Mile) Interpretation Method Manual 1 Mechanical 2 Comput Height of Blanking Band (Inches) Cutoff Height (Inches)	er 3
7.	SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES,	NO) NO

PREPARER Klemunes EMPLOYER SHEP/FHILA DATE 11/5/91

* STATE CODE

* SPS PROJECT CODE * TEST SECTION NO.

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET ____ OF ____

	<del></del>					<del>,</del>
STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE	SURFACE FRCTION LAYER
<u>0+0</u> 0	- 37 - 7 - 7 - 7 - 7 - 7				-1415/F-141 -0/canatard	:_
D+2 O			:-		1 2 3 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	:-
L+Q Q			==:=		- 1 Jaga - 1	:_
L+5 Q	- <u>- 39</u> - 39 - 79 - 79 - 79				1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	
2+QQ	3600				21483G	:_
Q+5 Q	- 394 - 34 - 15 - 15					
3+ <u>0</u> 5	- 45 - 84 - 149	2 :_		:		:
LAYER NUM	BER		1		_ 9	

PREPARER Klemunes EMPLOYER SHEP/ 14hA DATE 1-14-90

* STATE CODE

* SPS PROJECT CODE * TEST SECTION NO.

[30] [05] [09]

# LAYER THICKNESS MEASUREMENTS (Inches)

SHEET Q OF Q

	γ		т		,	
STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+50	- 34 - 34 - 44 - 48				7518	
1+00	- 37 - 37 - 45 - 45 - 40	:_ :_ :_	——:— ——:— ——:—			:
4+50	- 38 - 38 - 34 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3				500040 -120040	:
<u>5+00</u>						
_+						
_+					:_ :_ :_	· - · - · -
+						· - · - · -
LAYER NUMBE	ER .				9	

PREPARER Klemines EMPLOYER SHEP/1444 DATE 1-14-98

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS	* STATE CODE * SPS PROJECT CODE	[3 o] [0 5]
CONSTRUCTION DATA SHEET 11	* TEST SECTION NO.	[0 9]

Provide any miscellanious comments and notes concering construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indicatetion of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

Rod	AND	Level	SURVEUS	here	completed	_£ <del>5</del> 0199	AND -
							,
1	<b></b>	40 1	2	د سم	1 -0 2	20 10 -	1 4 - 1
MAFIER	CO175	TRUETION	<u>, 11169511</u>	Kenent	s here not	THICH	PETWERN!
6:575							
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PREPARER Klemunes

EMPLOYER SHRP/FHWA DATE /-/4

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2 * STATE CODE

* SPS PROJECT CODE * TEST SECTION NO. [30] [05]

DALVALLE

	POLYRUIT  1. LAYER 2. LAYER 3. MATERIAL 4. LAYER THICKNESSES (Inches) NUMBER DESCRIPTION TYPE								
NUMBER	DESCRIPTION	CLASS	AVERAGE	MINIMUM	MAXIMUM	STD. DEV.			
1	SUBGRADE(7)	[ <u>6</u> <u>a</u> ]	A Bard Silver . The	0.0000000000000000000000000000000000000	20.000 (100)				
2	1061	[문화]	[_13.4]						
3	1051	[조호]	[a.75]						
4	1031	[6 1]	[5.25]						
5	1091	[0 a]	[a.o]						
6	[क द्या	[8 €]	[0]						
7	[O T]	[20]	[a.o_]	·-					
8	(0 व)	[ <u>8 6]</u>	[01						
9	[01]	[ত্র তা	[_30]	- <b>-</b> - '-	<del></del>				
10	[]	[]	[ ]						
11	[]	[]	[ ]	·-					
12	[]	[]	[]						
13	[]	[]	[ ]						
14	[]	[]	[ · _ ]						
15	[]	[]	[]						

### NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.

Layer description codes:

If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.

- 3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.
- 4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER Klemunes JOHN EMPLOYER SHEP/FHILLS

DATE _/-5-9/

no Sketch

LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3

* STATE CODE * SPS PROJECT CODE [30]

* TEST SECTION NO.

 $[\underline{a}, \underline{5}]$ 

PREPARER Klemunes

EMPLOYER SHAP FHWA DATE 11-5-91

	10	patching
	LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE [30]  * SPS PROJECT CODE [05]  * TEST SECTION NO. [10]
1.	DATE PATCHING OPERATIONS BEGAN (Month-Da	ay-Year) []
2.	DATE PATCHING OPERATIONS COMPLETED	[]
3.	PRIMARY DISTRESS OCCURRENCE PATCHED (co- Other (Specify)	
4.	SECONDARY DISTRESS OCCURRENCE PATCHED (Other (Specify)	· · · · · · · · · · · · · · · · · · ·
5.	SUMMARY OF PATCHING N Surface Only [ Surface and partial base replacement [ Full depth [	UMBER TOTAL AREA (SQ. FT.) ]
6.	METHOD USED TO DETERMINE LOCATION AND S Deflection 1 Coring 2 V Other 4 (specify)	isual 3
7.	METHOD USED TO FORM PATCH BOUNDARIES None 1 Saw Cut 2 Air Ham Other 5 (Specify)	[] mer 3 Cold Milling 4
8.	COMPACTION EQUIPMENT None	
9.	Plant Mix with Emulsified Asphalt, Cold	ix with Cutback Asphalt, Cold Laid
10.	MINIMUM TIME FROM MATERIAL PLACEMENT TO	OPENING TO TRAFFIC (Hrs)
11.	MAXIMUM MATERIAL TEMPERATURE FOR TRAFF	C OPENING (if used) (*F) [
12.	AIR TEMPERATURE DURING PLACEMENT OPERATHIST Temperature (°F) Low Temperature (°F)	[
13.	PREDOMINATE ROAD SURFACE MOISTURE COND.  Dry 1 Moist 2	TION DURING PLACEMENT OPERATIONS [
PRE	PARER Komunes EMPLOYER	THRP/FHWA DATE 11-5-91

October 1990 NO Level-up LTPP-SPS CONSTRUCTION DATA * STATE CODE [30] RUT LEVEL-UP TREATMENT * SPS PROJECT CODE (<u>o</u> <u>5</u>) CONSTRUCTION DATA SHEET 5 * TEST SECTION NO. [0 \] 1. DATE LEVEL-UP LAYER APPLIED 2. PLACEMENT LOCATION OF LEVEL-UP LAYER Outside Rut.... 1 Inside Rut.... 2 Both Ruts.... 3 Full Lane Width... 4 LENGTH OF TEST SECTION COVERED  $\begin{bmatrix} 1 \end{bmatrix}$ Full Length of Test Section ..... 1 Partial Length of Test Section .... 2 (enter start and end station numbers) Outside Wheel Path Rut: Start Station _ + _ _ End Station _ + _ _ _ Inside Wheel Path Rut: Start Station _ + _ _ _ End Station _ + _ _ _ 4. AVERAGE RUT DIMENSIONS (Inches) DEPTH WIDTH Outside Wheel Path Rut Inside Wheel Path Rut 5. RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-UP None...... 1 Broomed....... 2 Broomed + Asphaltic Tack Coat.... 3 Asphaltic Tack Coat (only).... 4 Wheel Path Milling...... 5 (specify, inches) DEPTH ___ WIDTH ___ Other..... 6 (Specify) 6. COMPACTION EQUIPMENT Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire....... 6 Hand Tools...... 7 Other...... 8 (Specify)_____ 7. TYPE OF LEVEL-UP MATERIAL Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2 Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4 Road Mix with Emulsified Asphalt...... 5 Other... 6 (Specify) _____ [__.__] 8. MAXIMUM TOP SIZE AGGREGATE (Inches) [__] 9. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) 10. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (.F)

High Temperature (°F) Low Temperature (°F)

11. AIR TEMPERATURE DURING PLACEMENT OPERATIONS

Dry...... 1 Moist...... 2 Wet...... 3

PREPARER Klomunes EMPLOYER SURP/FHWA DATE 11-5-91

12. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [ ]

LTPP-SPS CONSTRUCTION DATA * STATE CODE (A D) PREPARATION OF MILLED TEST SECTIONS * SPS PROJECT CODE  $[\underline{a} \, \underline{5}]$ CONSTRUCTION DATA SHEET 6 * TEST SECTION NO.  $[\underline{J},\underline{o}]$ 1. DATE OF MILLING OPERATION 109-10-911 2. MANUFACTURER OF MILLING MACHINE (Specify) CmI1000 3. MILLING MACHINE MODEL DESIGNATION (Specify) [150] 4. WIDTH OF CUTTING HEAD (Inches) 5. TOTAL MILLED DEPTH (Inches) Location No. Measrmnts Maximum Minimum Std. Dev. Average Inside lane edge [<u>.94</u>] Outside lane edge MILLED SURFACE CHARACTERISTICS 6. Macro Texture Fine Macro Texture (≤¼ inch)... 1 Coarse Macro Texture(>¼ inch)... 2 8. Height of Ridge Between Parallel Passes? (Inches) [_ · q] 9. Other Comments? (Yes, No)  $[NO_{-}]$ Comments _____ 10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [<u>NO</u>] (If yes complete Construction Data Sheet 3) 11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) 12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES, NO) 13. LAYER NUMBER OF MILL REPLACEMENT 14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) 15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [3] "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2 Other... 3 (Specify) PolyBil+ 16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) 17. COMMENTS EMPLOYER SHAP FHIMA DATE //-5-9

OPEN GRADED

	LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [30]  * SPS PROJECT CODE [05]  * TEST SECTION NO. [10]
1.	SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLA None 1 Broomed 2 Broomed + As Asphaltic Tack Coat (only) 4	1324
	TACK COAT Layer Numbers Material Type None 1 SS-1 2 SS-1H CRS-2 5 CMS-2 6 CMS-2H 7 CSS-1	
		Diluent TO Parts Asphalt
4.	TACK COAT APPLICATION RATE (Gal/Sq. Yd.)	
	ASPHALT CONCRETE PLANT AND HAUL  Type Name Haul Distance  Plant 1 [A] Riving 400 [  Plant 2 [ ] [  Plant 3 [ ]  Plant Type: Batch 1 Drum Mix 2 Oc	
6.	MANUFACTURER OF ASPHALT CONCRETE PAVER	BLAW-Krox
7.	MODEL DESIGNATION OF ASPHALT CONCRETE PAVER	220 1971
8.	SINGLE PASS LAYDOWN WIDTH (Feet)	internaliste, top [22.0]
9.	AC BINDER COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inches Nominal Second Lift Placement Thickness (Inches Nominal Second Lift Placement Thickness (Inches Lift Placement Thick	
10.	AC SURFACE COURSE LIFT Layer Number	
11.	Nominal First Lift Placement Thickness (Inches Nominal Second Lift Placement Thickness (Inches SURFACE FRICTION COURSE Layer Number Nominal Placement Thickness (Inches)	s) <u> </u>
10		ا ــــــــــــــــــــــــــــــــــــ
14.	TEST SECTION STATION OF TRANSVERSE JOINTS (with Binder Course Surface Course Surface Friction Course	[_ +] [_ +]
13.	LOCATION OF LONGITUDINAL SURFACE JOINT Between lanes 1 Within lane 2 (specify of	fset from O/S feet) []
14.	SIGNIFICANT EVENTS DURING CONSTRUCTION(disrupti	ons, rain, equip. problems, etc.)
PR	EPARER Kemures EMPLOYER SHOP	THA DATE 1/-5-91

	0,	PP-SPS CONSTRUCTION VERLAY COMPACTION NSTRUCTION DATA SH	DATA	*	STATE CODE SPS PROJECT CO TEST SECTION D	ODE [30] NO. [05]	
1. 2.	DATE P	AVING OPERATIONS E	EGAN (Month-D	ay-Year)	[	9-11-91	]
3.	LAYER	NUMBER	•		`	Bothm [7]	1
4.	MIXING	TEMPERATURE (°F)				( <b>395</b> .	
5.	Mea Min	N TEMPERATURES (°F nimum	<u>2</u> 7 3.	Number Maximu	of Tests	<u>a</u> 7 9	
	Roller Code #		1 / <b>-</b>			itude Speed ches) (mph)	
	E F G H I J K L M N O P	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Other	  				Both 2.5mph-VIE. 3.5mph-STAT
	COMPACT	TION DATA	First Lift	Second Lift	Third Lift	Fourth Lift	
23 24	BREAKDO Roller Coverage	Code (A-0)	IVIBR ISTAT M Q.				·
25 26	INTERME Roller Coverag	Code (A-Q)					
27 28	FINAL Roller Coverag	Code (A-Q) ges	I VIBE I STAT N — 2.				
30	Compact	perature (°F) ed Thickness (In) Period (Days)	_ <u>7</u>				

PREPARER Klemunes EMPLOYER SHRP FHWA DATE 11-5-91

	CO1	PP-SPS CONSTRUCTION VERLAY COMPACTION NSTRUCTION DATA SH	DATA EET 8	*	STATE CODE SPS PROJECT TEST SECTIO		[30] [05]	
1. 2.	DATE P	AVING OPERATIONS B AVING OPERATIONS O	SEGAN (Month-D COMPLETED	ay-Year)		_ 9-1	9-31	]
3.	LAYER	NUMBER	•		5	urace	 [ <u>9</u> ]	1
4.	MIXING	TEMPERATURE (°F)	_				<u> </u>	1
5.	Mea Min	N TEMPERATURES (°F nimumndard Deviation	274	Number Maximun	of Tests		٥	
	Roller Code #		1 1			plitude Inches)	Speed (mph)	
10 11 12 13 14 15 16 17 18 19 20 21	D E F G H I J K L M N O P	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Oother						Both 2.5mph-VIB 3.5mph-STA
	COMPACT	CION DATA	First Lift	Second Lift	Third Lif	t Four	th Lift	
23 24	BREAKDO Roller Coverag	Code (A-O)	IVIBR ISTAT M — A.					
25 26	INTERME Roller Coverag	Code (A-O)			_			
27 28	FINAL Roller Coverag	Code (A-Q) ges	VIBE   STAT <u>N</u> _ Q.					
30	Compact	perature (°F) ted Thickness (In) Period (Days)	_ <u> </u>					

PREPARER Klemungs EMPLOYER SHRP/FHWA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA CONSTRUCTION QUALITY CONTROL MEASUREMENTS CONSTRUCTION DATA SHEET 9	* STATE CODE  * SPS PROJECT CODE  * TEST SECTION NO.	(30) (D5)
		1,22

1.	NUCLEAR	DENSITY	MEASUREMENTS

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C) ¹		. —	А	A	
Rod Depth (Inches)			0_0	00	
Number of Measurements			<i>o</i> _a	00	
Average (pcf)			148.6	148.0	
Maximum (pcf)			149.0	148.0	
Minimum (pcf)			148.1	148.0	
Standard Deviation (pcf)					
Layer Number			07	09	

(pcf)			148.6	148.0				
Maximum (pcf)		<u> </u>	149.0	148.0				
Minimum (pcf)			148.1	148.0				
Standard Deviation (pcf)				·_	<b>-</b>			
Layer Number			07	09				
¹ Measurement	t Method Back	scatter A	Direct Trans	mission B	Air Gap C			
2. MANUFACURI	er of nuclear i	ENSITY GAUGE		TR	oxle R			
3. NUCLEAR D	ENSITY GAUGE MO	DEL NUMBER		_3	140			
4. NUCLEAR DI	ENSITY GAUGE II	ENTIFICATION 1	NUMBER	165	505			
5. NUCLEAR GA	AUGE COUNT RATE	E FOR STANDARD	IZATION		<u> 3556</u>			
6. PROFILOGRA	APH MEASUREMENT	rs						
Profilograph Type California 1 Rainhart 2 Profile Index (Inches/Mile) Interpretation Method Manual 1 Mechanical 2 Computer 3 Height of Blanking Band (Inches) Cutoff Height (Inches)								
7. SURFACE P	ROFILE USED AS	BASIS OF INCE	NTIVE PAYMENT?	(YES, NO)	NO			
PREPARER	Klemmes	EMPLOYER	SHRP/FHM	4 DATE_	1-5-91			

* STATE CODE

* SPS PROJECT CODE * TEST SECTION NO.

[30]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET  $\sqrt{}$  OF  $\bigcirc$ 

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
<u>0+0</u> 0					- विक्रित्र	: :
<u>0</u> +50	- - - - - - - - - - - - - - - - - - -				1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	:_
1+00	0-1-1-00 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	: _ : _ : _			               	: : :
1+50	- 3705 - 770 - 770				   বাহাকাকাকা কাতাতাকা	
<b>3</b> +ΩΩ						
2+5Q	- 35 - 35 - 36 - 36 - 36 - 36 - 36 - 36 - 36 - 36			:-	भूषावाद्यक्ष भूषावाद्यक्ष	
3+00	- 37.04 - 7.04 -				-	:_
LAYER NUMB	ER				_ 2	

PREPARER KEMUNOS

EMPLOYER 548P/FHA DATE 1-14

* STATE CODE

* SPS PROJECT CODE

[30] [05]

* TEST SECTION NO.

LAYER THICKNESS MEASUREMENTS (Inches) SHEET ____ OF ___

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+5 <u>0</u>				: _ : _ : _	3109117 	
4+00	- 3704 - 140 - 140	:_	: :		477773	
4.50	-   역시   역시   작가이막					:
<u>5</u> +00	- 3794 - 794 - 74					
_+						
_+						
+			:	:- :-		: :
LAYER NUMBE	CR				9	

PREPARER Kemunes EMPLOYER SHRP FHMA DATE 1-14-90

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE [30]  * SPS PROJECT CODE [05]  * TEST SECTION NO. [10]
Provide any miscellanious comments and notes concer may have an influence on the ultimate performance cause undesired performance differences to occur be any quality control measurements or data for which forms. Provide an indicatetion of the basis for sur AASHTO, or Agency standard test designation.	of the test sections or which may tween test sections. Also include h space is not provided on other ch measurements, such as an ASTM,
- 2 Oct AM JOKE STREYS LOFTE	ACS SCIENCE SING
AFTER CONSTRUCTION. MEASUREMENT	3 hope not taken
Lotures 4:575	

PREPARER John AKEMURS EMPLOYER SHRP/FHhA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2 * STATE CODE

* SPS PROJECT CODE

[30]

* TEST SECTION NO.

[O 5] [L L]

		KRA T	on				
1.LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE	4. LAYER THICKNESSES (Inches)				
IVOI ID EAC	BESORTITION	CLASS	AVERAGE	MUMINIM	MUMIXAM	STD. DEV.	
1	SUBGRADE(7)	[ <u>6</u> <u>a</u> ]	s dimentina di di	in Contractor	- 1. 2. 11 to 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		
2	[ <u>0</u> &]	[E 9]	[_ <i>L</i> 3. <i>A</i> ]				
3	[ <u>0</u> 5]	(a a)	[a.75]				
4	[0 3]	(OT)	[5.25]	'-			
5	[09]	(aa)	[0.0]	~'-			
6	[ठ व]	18 61	[a]				
7	(0 T)	(a.c.)	[_2.0]			·-	
8	[0 a]	[8 E]	[0.1]	·-			
9	[0 1]	[A O]	[3.0]				
10	[]	[]	[ ]			<del>-</del>	
11	[]	[]	[ ]			·-	
12	[]	[]	[ ]				
13	[]	[]	[ ]				
14	[]	[]	[]				
15	[]	[]	[ ]				

#### NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.

Layer description codes:

If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.

3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.

4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER TOHN Klemmes

EMPLOYER SHRP FAWA

DATE <u>//-5-9/</u>

no sketch

LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3

* STATE CODE * SPS PROJECT CODE

* TEST SECTION NO.

	NO PA	tching
	LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE [3 0]  * SPS PROJECT CODE [0 5]  * TEST SECTION NO. [1 1]
1.	DATE PATCHING OPERATIONS BEGAN (Month-Day-Year)	[]
2.	DATE PATCHING OPERATIONS COMPLETED	[]
	PRIMARY DISTRESS OCCURRENCE PATCHED (code from Other (Specify)	· · · · · · · · · · · · · · · · · · ·
	SECONDARY DISTRESS OCCURRENCE PATCHED (code fro	
5.	SUMMARY OF PATCHING  Surface Only  Surface and partial base replacement []  Full depth  NUMBER  []	TOTAL AREA (SQ. FT.) [] []
6.	METHOD USED TO DETERMINE LOCATION AND SIZES OF Deflection 1 Coring 2 Visual Other 4 (specify)	3
7.	METHOD USED TO FORM PATCH BOUNDARIES None 1 Saw Cut 2 Air Hammer Other 5 (Specify)	3 Cold Milling 4
8.	COMPACTION EQUIPMENT None	Fruck Tire b
9.	PATCH MATERIAL Hot Mix Asphalt Concrete 1 Plant Mix with Plant Mix with Emulsified Asphalt, Cold Laid. Road Mix with Emulsified Asphalt	Road Mix with Cutback Asphalt. 4 Portland Cement Concrete 6
10.	MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENIN	G TO TRAFFIC (Hrs) []
11.	MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENI	NG (if used) (°F) []
12.	AIR TEMPERATURE DURING PLACEMENT OPERATIONS High Temperature (°F) Low Temperature (°F)	[]
13.	PREDOMINATE ROAD SURFACE MOISTURE CONDITION DU Dry 1 Moist 2 Wet	RING PLACEMENT OPERATIONS [] 3
PRE	PARER / CMUNES EMPLOYER SHRP/A	, =HWA DATE <u>//-5-9/</u>

		10 Level-u	ρ	······
RUT LEVEL-	STRUCTION DATA UP TREATMENT N DATA SHEET 5	* STATE * SPS PE		[ <u>4</u> <u>1</u> ]
L. DATE LEVEL-UP L	AYER APPLIED		[	]
	ION OF LEVEL-UP LAYER 1 Inside Rut 2 Box	th Ruts 3 Ful	ll Lane Width	. 4 [_]
Partial Length Outside Wheel	SECTION COVERED Test Section 1 of Test Section 2 Path Rut: Start Stati Path Rut: Start Stati	(enter start and e on + on +	end station num End Station _ End Station _	[_] bers) - +
4. AVERAGE RUT DIM	ENSIONS (Inches) Outside Whee Inside Whee	l Path Rut	DEPTH []	WIDTH
None 1 Asphaltic Tack Wheel Path Mill	PRIOR TO APPLICATION O Broomed 2 Br Coat (only) 4 ing 5 (spec Specify)	oomed + Asphaltic ify, inches) DEP		3 []
Vibratory Kolle	PMENT 1 Pneumatic roller r 4 Steel Wheel Roll 7 Other	er 5 Truck lir	e.,,,,,,,,,,,,,,,,	0
Plant Mix with Road Mix with F	P MATERIAL Concrete 1 Plant   Emulsified Asphalt, Col mulsified Asphalt	d Laid. 3 Road Mix		
8. MAXIMUM TOP SI2	E AGGREGATE (Inches)			[
9. MINIMUM TIME FE	OM MATERIAL PLACEMENT I	O OPENING TO TRAF	FIC (Hrs)	[
10. MAXIMUM MATERIA	L TEMPERATURE FOR TRAFF	FIC OPENING (if us	ed) (°F)	[
11. AIR TEMPERATURI High Temperatur Low Temperature		TIONS		( <u> </u>
	AD SURFACE MOISTURE CONI		EMENT OPERATION	ns [
,				

OPEN	GRADED M	://ina			20021 1770		
LTPP-SPS CONSTRU PREPARATION OF MILLI CONSTRUCTION DA	* STATE CODE  * SPS PROJECT CODE  * TEST SECTION NO.  [2 5]						
1. DATE OF MILLING OPER	ATION			109-0	3-911		
2. MANUFACTURER OF MILL	ING MACHINE (Spec	if <del>y</del> )	Cn.	T			
3. MILLING MACHINE MODE	L DESIGNATION (Sp	ecify) _	100	ත			
4. WIDTH OF CUTTING HEA	D (Inches)				( <u>150</u> )		
5. TOTAL MILLED DEPTH (	Inches)						
Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average		
Inside lane edge					[96]		
Outside lane edge					[ <b>9</b> ]		
MILLED SURFACE CHARACTE 6. Macro Texture Fine Macro Text 7. Estimate of exte	ure (≤¼ inch)						
8. Height of Ridge	Between Parallel	Passes? (In	nches)		[ <b>_</b> ]		
9. Other Comments? Comments	(Yes, No)				[ <u>NO</u> ]		
10. WHERE PATCHES PLACE (If yes complete Co					[]		
11. LENGTH OF TIME MILL 12. WAS MILL REPLACEMEN 13. LAYER NUMBER OF MIL 14. NOMINAL THICKNESS OF	T LAYER THICKER ' L REPLACEMENT	THAN MILL D	EPTH (YES,N	-	[_48] [ <u>'20</u> ] [7] [_ <b>9</b> .0]		
15. TYPE OF MILL REPLACEMENT LAYER MATERIAL  "Virgin" Asphalt Concrete 1 Recycled Asphalt Concrete 2  Other 3 (Specify)							
16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES] IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) []							
17. COMMENTS							
	·			<u>-</u>			
		· · · · · · · · · · · · · · · · · · ·	<del></del>	·	<del></del>		
PREPARER Klemune:	s employ	er <i>shrp</i> /	FHWA	DATE //-	5-9/		

	LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS	* STATE CODE [30] * SPS PROJECT CODE [05]
	CONSTRUCTION DATA SHEET 7	* TEST SECTION NO. Z
1.	SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLA None 1 Broomed 2 Broomed + As Asphaltic Tack Coat (only) 4	
. 2.	TACK COAT Layer Numbers Material Type None 1 SS-1 2 SS-1H CRS-2 5 CMS-2 6 CMS-2H 7 CSS-1 Other 10 (Specify)	
3.	TACK COAT DILUTION (Percent)	Diluenc TO Parts Asphalt
4.	TACK COAT APPLICATION RATE (Gal/Sq. Yd.)	_ ( <i>∆</i> · <i>↓</i> _ i
·	ASPHALT CONCRETE PLANT AND HAUL  Type Name Haul Distance  Plant 1 [2]	ce (Mi) Time (Min) Layer Numbers  [ 8] [7] [9] [ ]  [
6.	MANUFACTURER OF ASPHALT CONCRETE PAVER	BLAW-KNOX
. 7.	MODEL DESIGNATION OF ASPHALT CONCRETE PAVER	220 1971
8.	SINGLE PASS LAYDOWN WIDTH (Feet)	elmeliate, top [22.0]
, <b>9.</b>	AC BINDER COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inche Nominal Second Lift Placement Thickness (Inche	
10.	AC SURFACE COURSE LIFT Layer Number Nominal First Lift Placement Thickness (Inche Nominal Second Lift Placement Thickness (Inche	 
11.	SURFACE FRICTION COURSE Layer Number Nominal Placement Thickness (Inches)	
12.	TEST SECTION STATION OF TRANSVERSE JOINTS (with Binder Course Surface Course Surface Friction Course	in test section) [ + [_ +
13.	. LOCATION OF LONGITUDINAL SURFACE JOINT Between lanes 1 Within lane 2 (specify of	fset from O/S feet) [
14.	. SIGNIFICANT EVENTS DURING CONSTRUCTION(disrupti	ons, rain, equip. problems, etc.
חם	LEPARER Klonings EMPLOYER SHOP/2	, FILMA DATE 1/-:5-91

	70	PP-SPS CONSTRUCTIO VERLAY COMPACTION NSTRUCTION DATA SH	DATA			CODE PROJECT CO SECTION N	)DE [	301	
1. 2.	DATE P.	AVING OPERATIONS E	SEGAN (Month-	Day-Year)		[_		1-9 / a-9 I	]
3.	LAYER	NUMBER	<i>,</i>			· <del></del>		$A \rightarrow I$ D = [Z]	1
4.	MIXING	TEMPERATURE (°F)						2 <u>0</u> 5.	
5. RO	Mean Min:	N TEMPERATURES (°Fn	<u> </u>	Num Max	ber of Te	ests			
	Roller Code #		Gross Wt Ti	re Press.	Frequence (Vibr./Mi	cy Ampli	itude	Speed (mph)	
	1 F 2 G 3 H 1 J 6 K 7 L 8 M 9 N 0 P	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr.							Both 2.5mph-US 3.5mph-STA
_	COMPACT	ION DATA	First Lift	Second L	ift Thi	rd Lift	Fourth	Lift	
23	Coverag	Code (A-Q) es	IVIBR ISTAT M — Q.						,
25 26	INTERME Roller Coverag	Code (A-O)							
27 28	FINAL Roller Coverag	Code (A-Q) es	IVIBE ISTAT N — 2.	_					
30	Compact	perature (°F) ed Thickness (In) Period (Days)				·			
PR.	EPARER 📝	Klemunes	<b>EMP</b> LOYER	SHRP   FI	HWA	DATE	11-5-	9/	_

	07	PP-SPS CONSTRUCTION VERLAY COMPACTION NSTRUCTION DATA SHI	DATA		* STATE CO * SPS PROJ * TEST SEC	JECT CODE	[ <b>Q T</b> ] [3 <b>C</b> ]	
1. 2.	DATE P.	AVING OPERATIONS B AVING OPERATIONS C	EGAN (Month-D	ay-Year)		[_ 9:	12:91	
3.	LAYER	NUMBER				SURT		j
4.	MIXING	TEMPERATURE (°F)				CURI	( <u>a</u> <u>9</u> 5.	, •
5.	LAYDOW	N TEMPERATURES (°F	)				S A O	1 .
ROI	MIN.	nimumndard Deviation	250	Num Max	per of Test	s	· 278	:
	Roller Code #			re Press.	Frequency (Vibr./Min)	Amplitude (Inches)		
	E F G H I J K L M N O P	Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Steel-Whl Tandem Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Pneumatic-Tired Single-Drum Vibr. Single-Drum Vibr. Single-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Double-Drum Vibr. Oother	  					Both 2.5mph-VIE 3.5mph-STA
	COMPACT	CION DATA	First Lift	Second Li	ift Third	Lift Fou	rth Lift	
23	BREAKDO Roller Coverag	Code (A-O)	1 VIBR 1 STAT <u>M</u> Q.					·
25 26	INTERME Roller Coverag	Code (A-O)						
27 28	FINAL Roller Coverag	Code (A-Q) es	VIBL   STAT <u>N</u> _ Q.					
30	Compact	perature (°F) ed Thickness (In) Period (Days)	_ <u>1</u> <u>5</u> 					
PRI	EPARER _	Hemines	<b>EMP</b> LOYER	SHRP/F	HWA	DATE //	/5/9/	-

LTPP-SPS CONSTRUCTION DATA
CONSTRUCTION QUALITY CONTROL MEASUREMENTS
CONSTRUCTION DATA SHEET 9

* STATE CODE

* SPS PROJECT CODE

* TEST SECTION NO.

. NUCLEAR DEN	SITY MEASUREME	INTS						
LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer			
Measurement  Method (A, B, C) ¹	_	<u> </u>	A	A	<del></del>			
Rod Depth (Inches)			00	00				
Number of Measurements			<u>o</u> a	00				
Average (pcf)			146.a	141.8				
Maximum (pcf)			146.a	149.5				
Minimum (pcf)			146.3	146.1				
Standard Deviation (pcf)				 				
Layer Number			07	09	<u> </u>			
¹Measurement Method Backscatter A Direct Transmission B Air Gap C  2. MANUFACURER OF NUCLEAR DENSITY GAUGE  3. NUCLEAR DENSITY GAUGE MODEL NUMBER  4. NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER  16505								
5. NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION 3554								
6. PROFILOGRAPH MEASUREMENTS								
Profilograph Type California 1 Rainhart 2  Profile Index (Inches/Mile)								
. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO)								

PREPARER KEMUNES

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS

LAYER THICKNESS MEASUREMENTS (Inches)

* STATE CODE

* SPS PROJECT CODE

CONSTRUCTION DATA SHEET 10 * TEST SECTION NO.

SHEET ___ OF ___

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
<b>a+a a</b>	-   기기   -   제기 시작   -   전기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기		:-	: :	- ব্যক্ষাধ্য - কাক্ষাধ্য	
<u>0+5 0</u>					010171718 	: :
L+Q.0					अध्यक्षत	: : :
L+5.0	- 0739 - 3704 - 74				7.000 	:-
2+00	- 379 - 379 - 794 - 1493					:_
2±50	- 13건(45) - 13건(94) - 17건					:
3+00	- 39 - 39 - 39 - 19 - 19 - 1			:_	OB7140 	:_
LAYER NUMBE	R				_9	

PREPARER Klemunes

EMPLOYER SHAP/FHING DATE 1-14-98

* STATE CODE

* SPS PROJECT CODE * TEST SECTION NO.

[<u>3</u> <u>0</u>] [<u>0</u> <u>5</u>]

## LAYER THICKNESS MEASUREMENTS (Inches)

SHEET Q OF Q

	<del></del>		T			
STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+5 Q	- 3707 - 707 - 71			:_	1000177	
1+00				:- :- :- :-	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	:_
<u>4</u> +50	- 3704 - 714 - 714				1	
€+O O	055 <u>5</u> 04 3704				- 45554 	
_+						
_+				:_		
+				:-   :-   :-	:-	
LAYER NUME	BER				9	

PREPARER Klemunes EMPLOYER SHAP/F4149 DATE 1-14-90

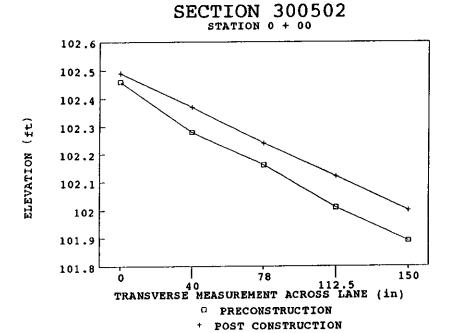
LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE [30]  * SPS PROJECT CODE [05]  * TEST SECTION NO. [11]
Provide any miscellanious comments and notes concer may have an influence on the ultimate performance of cause undesired performance differences to occur be any quality control measurements or data for which forms. Provide an indicatetion of the basis for such AASHTO, or Agency standard test designation.	of the test sections or which may tween test sections. Also include a space is not provided on other ch measurements, such as an ASTM,
Lotucea) L'FTS	beted before and
AFTER CONSTRUCTION. MERSUREMENT	3 hope and taken
Lothern L'F75	
<u> </u>	
	·
·	

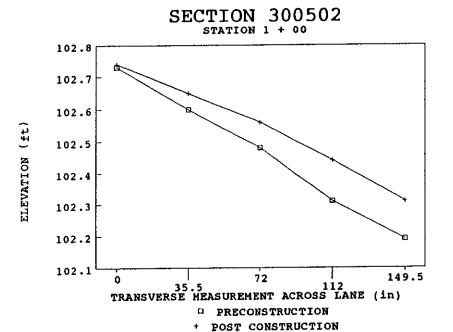
PREPARER John A Klemures EMPLOYER SHRP/FHhA DATE 1-14-90

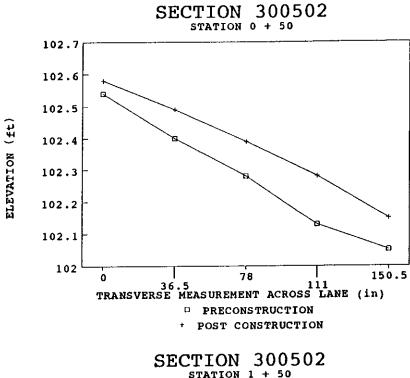
APPENDIX B

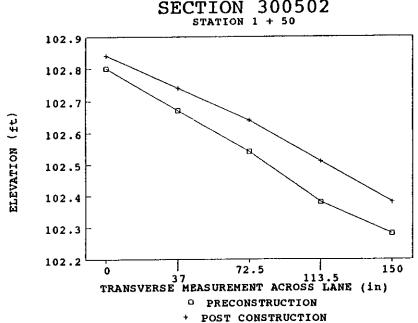
	= HI PRECON = HI POSTCON				ASSUMEDELES	ATION OF 100	oo et			SPS-5 ROD AN	ID LEVEL CALC	BIGTIMBER, N	AONTANA	•						
STATION	LANE TO		ELEVATION	DIFFTHICK	ASSUMED ELEVATION OF 100 OUTER WHEEL PATH		ELEVATION	DIFFTHICK	CENTER LINE			DIFFTHICK	IN WHEEL	PATH	ELEVATION	DIFFTHICK	LANE TO LA	ANE	ELEVATION	DIFF THICK
	(in)	PAL.	. (9	(inches)	(inches)	A&L	70	(inches)	(m)	FASIL	40	(inches)	(in)	RAL	THE VALUE OF	(inches)	(0)	REL	ECE ANIMA	(inches)
0+00	0.00				40.00			· •	78.00			F. C. C. C.	112.50		19	1-10-10-0)	150.00	1111	1 2	(ERCHES)
PRECON		5,27		2.29		5.45	102.28	1.08		5.57	102.16	0.96		5.72	102.01	1.32	130,00	5.84	101.89	1.3
POSTCON		5.46	102.49			5.56	102.37			5.71	102.24			5.83				5.95	102.00	
0+50	0.00	<del> </del>	<del>                                     </del>	<del> </del>	36.50				78.00	~-			111.00				150.50			
PRECON		5.19	102.54	2.16		5.33	102.40	1.00		5.45	102.28	1.32		5.60	102.13	1.80	130.30	5.69	102.05	1.2
POSTCON		5.37	102.56			5.46	102.49			5.56	102.39	1.32		5.87		1,50		5.60	102.05	1.2
1+00	0.00				35.50				72.00											
PRECON		5.00	102.73	2.52		5.13	102.60	0.60	72.00	5.25	102.48	0.96	112.00	5.42			149.50			
POSTCON		5.21				5.30	102.65	0.50		5.39	102.56		<del></del> +	5.51		1.56		5.54 5.64		1.4
1+50	0.00														102.71			3.04	192.51	
PRECON	0.00	4.93	102.90	2.16	37.00				72.50				113.50				150.00		1	
POSTCON		5.11		2.15		5.06	102.87	0.84		5.19	102.54	1.20		5.35	102.38	1.56		5,45		1.2
1001001		3.11	102.64			5.21	102.74			5.31	102.64			5.44	102.51			5.57	102.38	
2+00	0.00				39.00				75.50				112.00				149.00		<del>  </del>	
PRECON		4.82		2.28	Ī	4.96	102.77	1.08		5.08	102.65	1.20		5.21	102.52	1.44	1,10,00	5.32	102.41	1.0
POSTCON		4.98	102.97			5.00	102.96			5.20	102.75			5.31				5.45		
2+50	0.00		<del>                                     </del>		46.00				81.50				114.50				151.00			
PRECON		4.65	103.08	1.90		4.92	102.91	1.32		4.92	102.81	1.20	117.00	5.05	102.68	1.44	13130	5.13	102.60	0.96
POSTCON		4.80	103.15			4.93	103.02			5.04	102.91	20		5.15		7.77		5.27		0.86
3+00	0.00				36.50				82.00											
PRECON		4.48	103.25	1.92		4.81	103.12	1.08	82.00	4,75	102.98		114.00				147.50			
POSTCON		4.64	103.31	- 15-		4.74	103.12	1.06	-	4.97	102.08	1,20		4.87 4.98	102.96 102.97	1.32		4.94 5.08		0.96
3+50	0.00													7.50	, , , , , , , , , , , , , , , , , , , ,		-	3.06	102.67	
PRECON	0.00	4.26	103.47		37.50				74.50				111.50				148.00		1	
POSTCON		4.42		1.92		4.30	103.34	1.08		4.50	103.23	1.20		4 B4	103.09	1.56		4.71		0.96
FUSICAN		9.92	103.53			4.52	103.43			4.62	103.33			4.73	103.22			4.85	103.10	
4+00	0.00				37.00		·		77.00	<del>- i</del>			111.00				147.50			
PRECON		4.20	103.53	-1.92	1	4.17	103.56	1.09		4.27	103.46	1.08		4.41	103.32	1.56	.,,,,,,,,	4.47	103.26	0.96
POSTCON		4.04	103.91			4.30	103.65			4.40	103.55			4.50	103.45	7.20		4.61		
4+50	0.00				3850				79.00				113.50				149.50			
PRECON		3.90	103.74	1.66		4.07	103.66	0.84	78.00	4.15	103.58	1.08	113.30	4.25	103.48	1.20	149.50	431		
POSTCON		4.13	103.92			4.22	103.73			4.28	103.67	1.08		4.37	103.48	-   20   -		4.44	103.42	1.08
5+00	0.00				39.50				78.50											
PRECON	0.00	3.96	103.97	2.16	39.30	3.94	103.79	0.64	78.50		400 70		113.00				149.50			
POSTCON		4.04	103.91	2.10		400	103.98	U.84	<del></del>  -	4.00	103.73	1.08		4.07	103.66	1.32		4.12	103.61	1.20
		7,071	100.51			7,001	103.60			4.13	103.82			4.10	103.77			4.24	103.71	

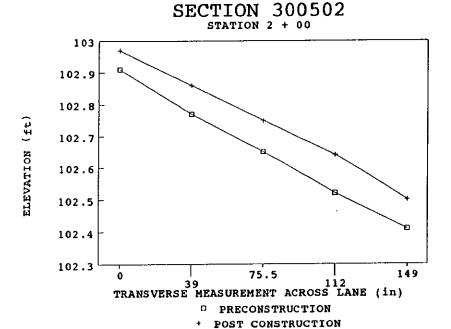
e de la companya de

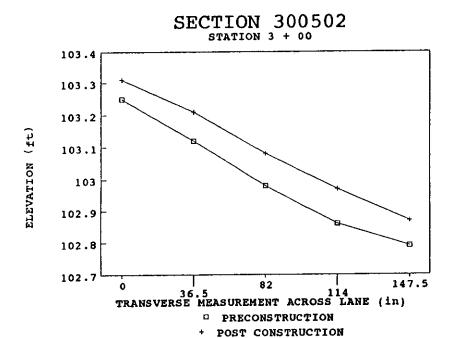


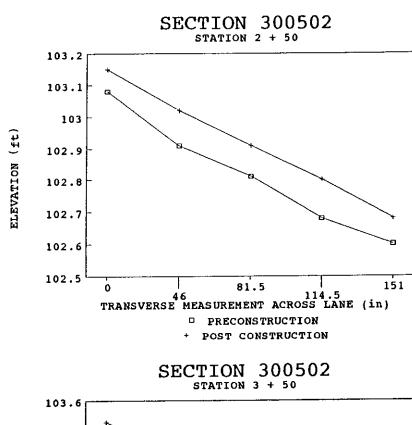


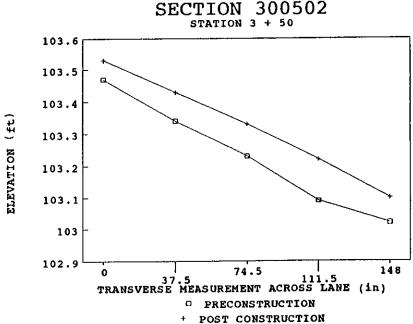








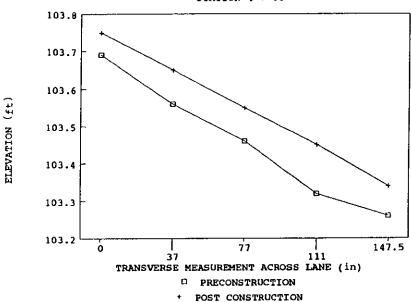




## **SECTION 300502**

STATION 4 + 00

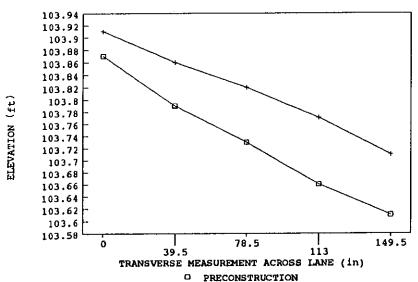
1 151



## **SECTION 300502**

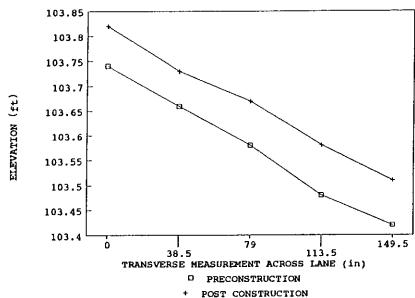
STATION 5 + 00

+ POST CONSTRUCTION



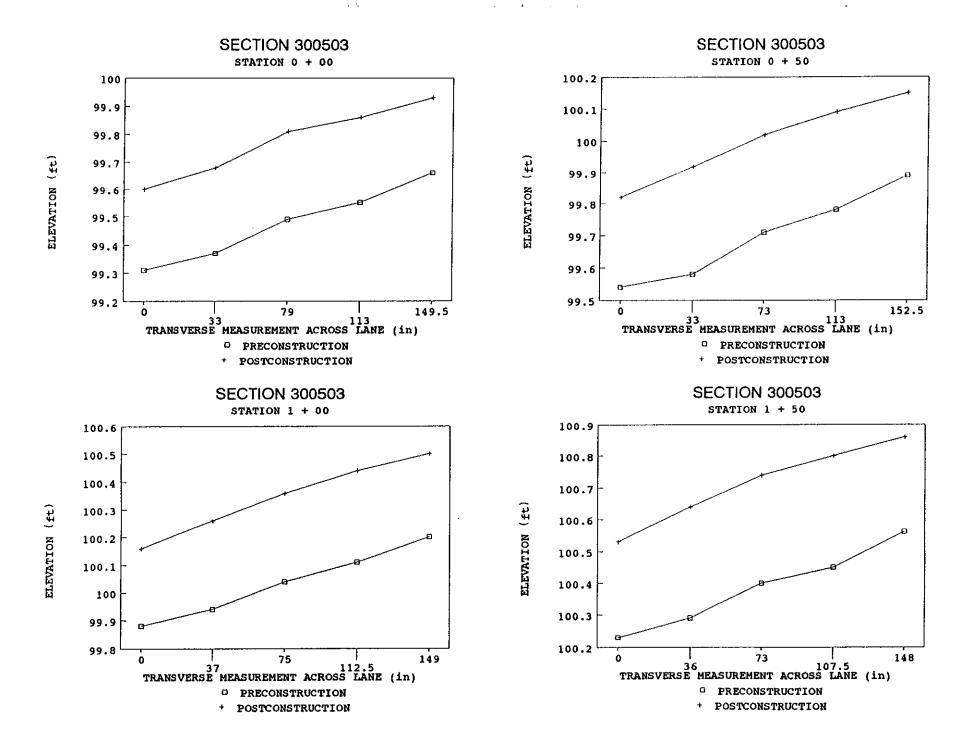
## **SECTION 300502**

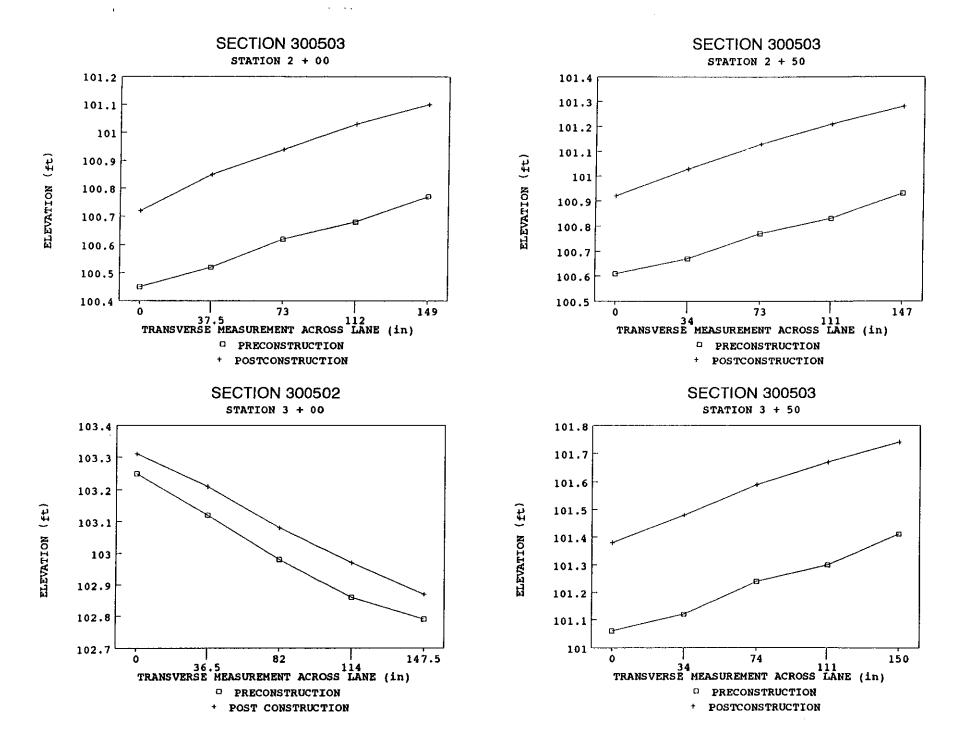
STATION 4 + 50

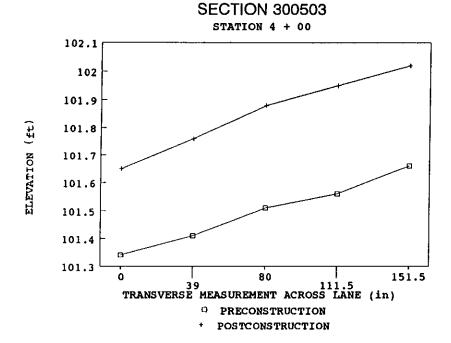


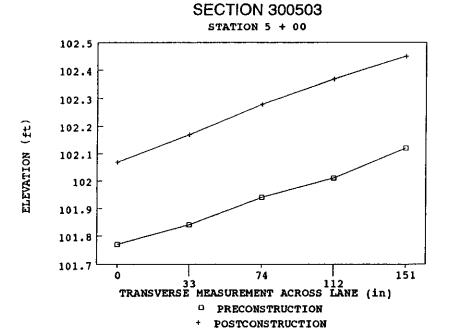
	= HI PRECON = HI POSTCON			ASSUMEDELEV	VATION OF 100	met						BIG TIMBER, M								
STATION	LANE TO			DIFFTHICK			ÉLEVATION	DIFF THICK T	CENTER			DIFFTHICK	IN WHEEL		ELEVATION	DIFFTHICK	LANE TO	ANE	ELEVATION	DIFFTHICK
1	(in)	PARL	10	(inches)	(N)	PAL	70	(inches)	(in)	RAL	60	(inches)	(in)	PAL	70	(inches)	(in)	PAL	10	(inches)
0+00	0.00			1	33.00				79.00				113.00			F::::::::::	149.50		1.7	
PRECON		6.20	99.31	3.48		6.14	99.37	3.72		8.02	99.49	3.94	.,,	5.96	99.55	3.72	1144	5.85	99.96	3.24
POSTCÓN		6.05	99.60			5.97	99.68			5.84	99.81			5.79	99.86			5.72	99.93	
0+50	0.00				33.00				73.00				113.00			<del>                                     </del>	152.50			····
PRECON		5.97	99.54	3.36		5.93	99.58	4.08		5.90	99.71	3.72		5.73	99.78	3.72		5.62		3.12
POSTCON		5.83	99 82			5.73	90.02			5.63	100.02			5.56	100.09			5.50	100.15	
1+00	0.00				37.00				75.00				112.50				149.00			
PRECON		5.63	90.00	3.36		5.57	99.94	3.84		5.47	100.04	3 84		5.40	100.11	3.96		5.31	100.20	
POSTCON		5.49	100.18			5.39	100.26			5.29	100.36			5.21	100.44			5.15	100.50	
1+50	0.00				38.00				73.00				107.50				148.00			
PRECON		5.28	100.23	3.60		5.22	100.29	4.20		5.11	100.40	4.08		5.06	100.45	4.20	1	4.95	100.56	3.50
POSTCON		5.12	100.53			5.01	100.64			4.01	100.74			4.85	100.90			4.79	100.86	
2+00	0.00				37.50				73.00			·	112.00			-	149.00			
PRECON		5.06	100.45	3.48		4.99	100.52	3.96	70.00	4.89	100.62	3.84	712.00	4.83	100.69	4.20	174.00	4.74	100 77	3.96
POSTCON		4.93	100.72			4.80	100.85			4.71	100.94			4.62	101.03		į	4.55	101.10	
2+50	0.00				34.00	····			73.00				111.00				147.00			
PRECON		4.90	100.61	3.72		4 B4	100.67	4.32		4.74	100.77	4.32		4.68	100 83	4.56		4.58	100.93	4.20
POSTCON		4.73	190.92			4.62	101.03			4.52	101.13			4.44	101.21			4.37	101.28	
3+00	0.00				35.00	· · · · · · · · · · · · · · · · · · ·		-	74.50	+	-		112.00				148.50			
PRECON		4.68	100.63	3.64		4.63	100.96	4.56		4.50	101.01	4.20		4.44	101.07	4.56		434	101.17	4.20
POSTCON		4.50	101.15			4.39	101.26			4.29	101.36			4.20	101.45			4,13	101.52	
3+50	0.00		<del></del> -		34.00		<del></del> }		74.00		<del></del>		111.00				150.00			
PRECON		4.45	101.08	3.84		439	101.12	4.56	,	4.27	101.24	4.20	.,,,,,,	4.21	101.30	4.44		4.10	101.41	3.96
POSTCON		4.27	101.38			4.17	101.48			4.06	101.50			3.96	101.67			3.91	101.74	
4+00	0.00				39.00		—·		90.00				11130				151.50			
PRECON		4.17	101,34	3.72		4.10	101.41	4.20		4.00	101.51	4.44		3.95	101.56	4.60		3.85	101.88	4.32
POSTCON		4.00	101.65			3.89	101.76			3.77	101.98			3.70	101.95			3.63	102.02	
4+50	0.00	+	<del></del>		33.50				75.50				112.00				152.00			<del></del>
PRECON		3.92	101.59	3.24		3.85	101.66	3.84		3.75	101.78	4.09		3.60	101.82	4.32		3.50	101.92	3.96
POSTCON		3.79	101.96			3.67	101.98			3.55	102.10	,,,,		3.47	102.18			3.40	102.25	
5+00	0.00				33.00				74.00				112.00				151.00			
PRECON		3.74	101.77	3.60	27.17	3.67	101.84	3.96		3.57	101.94	4.08		3.50	102.01	1.32		3.39	102.12	3.96
POSTCON		3.58	102.07			3.49	102.17			3.37	102.28			3.29	102.37			3.20	102.45	

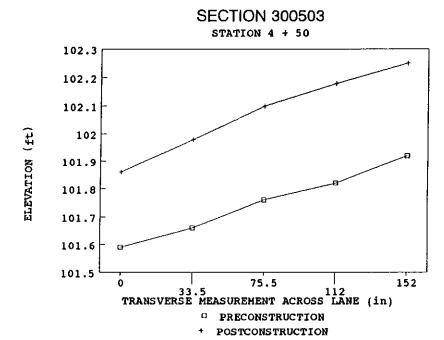
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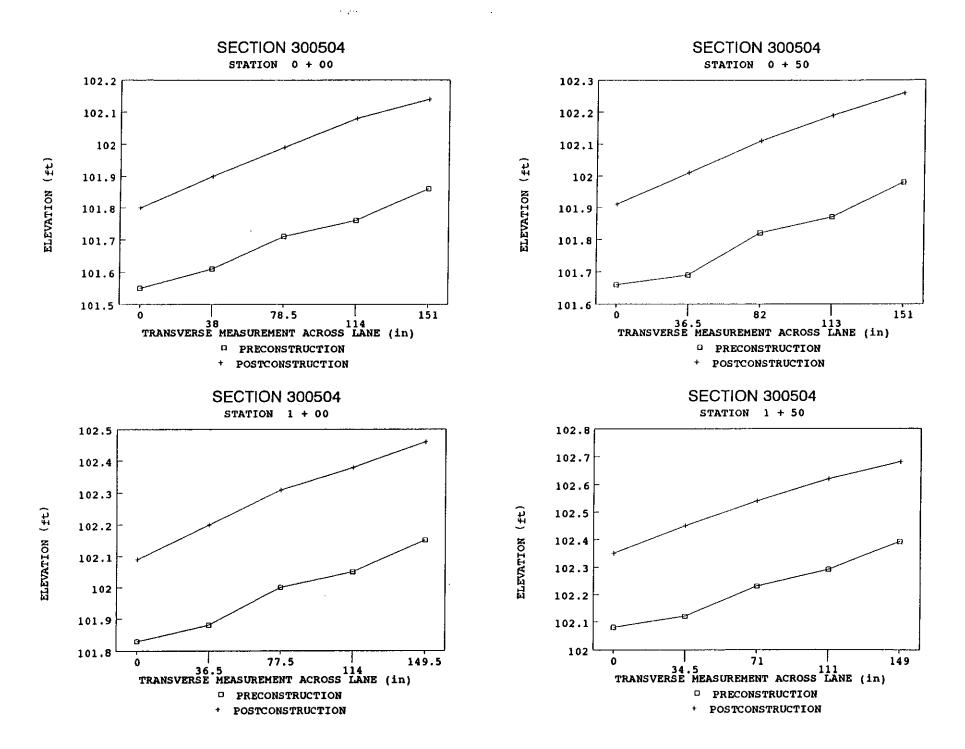


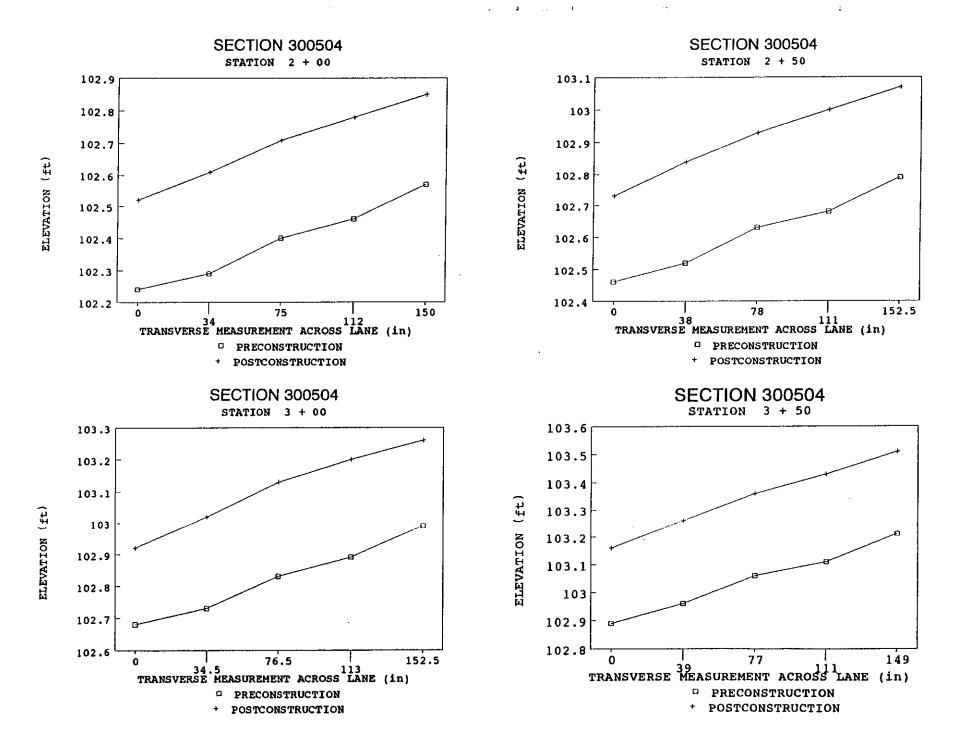


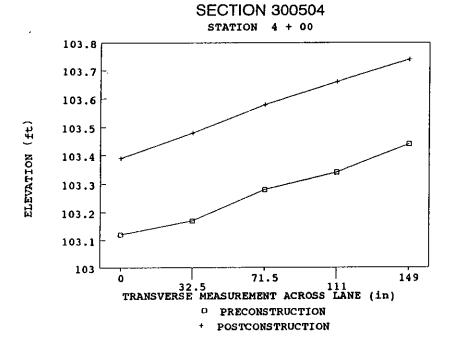


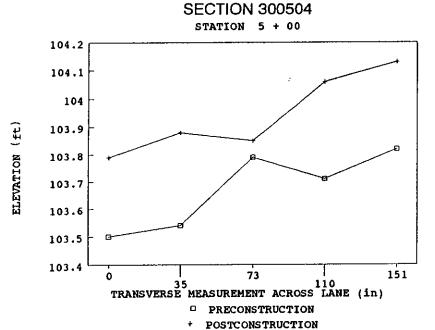


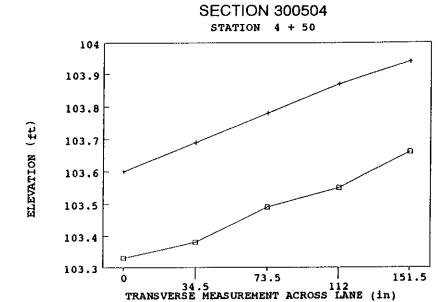
	- HI PRECON - HI POSTCOP				VATION OF 100							BIGTIMBER, M								
STATION	LANE TO		ELEVATION		OUTER WHEEL		ELEVATION	DIFFTHICK	CENTER	LINE		DIFFTHICK	IN WHEEL		ELEVATION		LANE TO		ELEVATION	DIFFTHICK
	(in)	ALL	(10	(inches)	(n)	R&L	(9)	(inches)	(in)	PAL	(1)	(inches)	(in)	PALL .	10	(inches)	(n)	ALL	(1)	(Inches)
0+00	0.00				38.00				78.50				114.00				151.00	5 47		
PRECON		5.78		3.00		5.72	101.61	3.48		5.62	101.71	3.36		5.57	101.76	5.04				
POSTCON		5.71	101.80			5.61	101.90			5.52	101.99			5.33	102.18			5.37	102.14	<del> </del>
0+50	0.00		1		36.50				82.00			<del></del>	113.00				151.00		<del> </del>	
PRECON		5.67	101.68	3.00		5.84	101.69	3.84		5.51	101.82	3.48	- :/4.55	5.46	101.97	3.64		535	101.98	3.36
POSTCON		5.80	101.91			5.50	102.01			5.40	102.11			5.32	102.19			5.25	102.28	
1+00	0.00				36.50				77.50		·	-	114.00				149.50		<del> </del>	
PRECON		5.50		3.12		5.45	101.98	3.84		5.33	102.00	3.72	1	5.29	102.05	3.96	i	5.18	102.15	3.72
POSTOON		5.42	102.00			5.31	102.20			5.20	102.31			5.13	102.38			5.05	102.48	
1+50	0.00		<del>  </del>		34.50				71.00				111.00				149.00		<del> </del>	<del> </del>
PRECON		5.25		3.24		5.21	102.12	3.96		5.10	102.23	3.72	- 1,7.24	5.04	102.29	3.96		4.94		3.48
POSTCON		5.18	102.35			5.06	102.45			4.97	102.54			4.89	102.62			4.83	102.68	
2+00	0.00		<del> </del>		34.00				75.00				11200				150.00			<b>  </b>
PRECON		5.09	102,24	3.00		5.04	102.29	3,84		4,93	102.40	3,72	112.00	4.87	102.48	3.84	150.00	4.76	102.57	3.36
POSTCON		4.96	102.52			4.90	102.61			4.80	102.71			4.73	102.78			4.66		
					38.00												152.50			
2+50 PRECON	0.00	4.97	102.46	3.24	39,00	4.81	102.52	3.84	78.00	4.70	102.63	3.60	111.00	4.65	102.68	3.84	152.50	4.54	102.79	3.36
POSTCON		4.78		3.24		4.67	102.84			4.58	102.93	3.50	<del></del>	451	103.00	3.54	<del></del>	4.44	103.07	3.30
100,000							104.27		f	7.20	102.00		<del></del>	7-71	100.00			7.77	100.07	$\overline{}$
3+00	0.00				34.50				76.50		· · · · · · · ·		113.00				152.50			
PRECON		4.85	102.68	2.88		4.60	102.73	3.48		4.50	102.83	3.60		4.44	102.80	3.72		4.34		3.24
POSTCON		4.50	102.92			4.49	103.02			4.38	103.13			4.31	103.20			4.25	103.25	
3+50	0.00		<del>                                     </del>		39.00				77.00		·		111.00		··		149.00			
PRECON		4.44	102.89	3.24		4.37	102.96	3.60		4.27	103.06	3.60		4 22	103.11	3.84		4.12		
POSTCON		4.35	103.16			4.25	103.26			4.15	103.36			4.08	103 43			4.00	103.51	
4+00	0.00		<del>                                     </del>	<del></del>	32.50				71.50				111.00	<del></del> -i			149.00			·
PRECON		4.21	103.12	3.24		4.26	103.07	4.92		4.05	103.28	3.60		3.99	103.34	3.94		3.89	103.44	3.50
POSTCON		4.12	103.39			4.03	103.48			3.93	103.58			3.65	103.66			3.77	103.74	
4+50	0.00				34.50				73.50				112.00	-			151.50			
PRECON		4.00	103.33	3.24		3.95	103.38	3.72		3.84	103.49	3.48		3.78	103.55	3.64		3.67	103.66	3.36
POSTCON		3.91	103.60			3.62	103.69			3.73	103.78			3.64	103.87			3.57	103.94	
5+00	0.00		<del>                                     </del>		35.00	<del></del>	<del></del>		73.00	<del></del>			110.00				151.00			
PRECON		3.63	103.50	3.48		3.79	103.54	4.08		3.54	101.79	0.72		3.82	103.71	4.20		3.51	103.82	3.72
POSTCON		3.72	103.79			3.63	103.88			3.66	103.95			3.45	104.06			3.39	104.13	









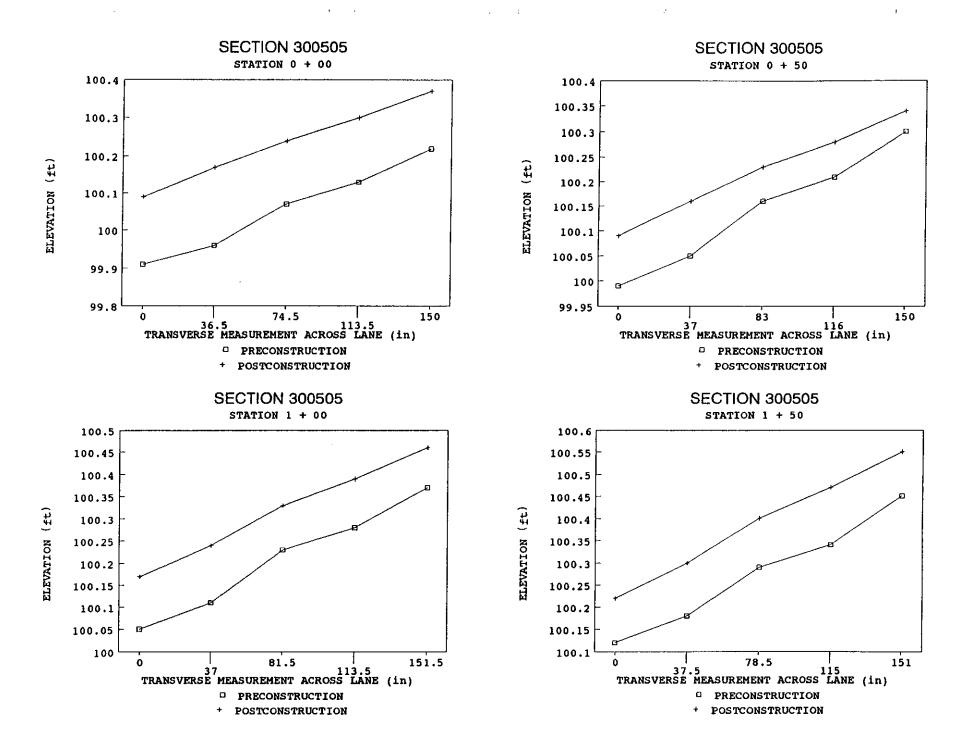


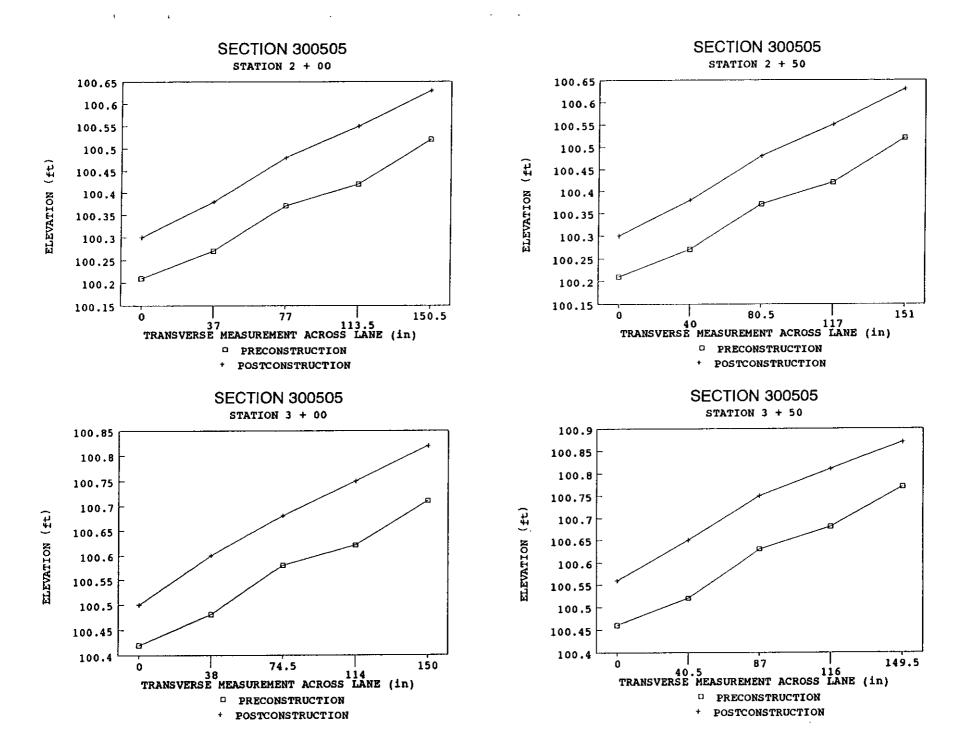
□ PRECONSTRUCTION

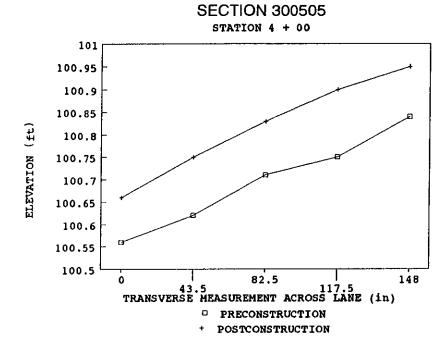
+ POSTCONSTRUCTION

5.22	= HI PRECON = HI POSTCO	N			VATION OF 100					SECTION 30050	5 MINIMUM PI	. BIG TIMBER, M REPARATION, 2 II	NCH VIRGIN							·
STATION	LANE TO				OUTER WHEE		ELEVATION	DIFFTHICK	CENTER		ELEVATION	DIFFTHICK	IN WHEEL		ELEVATION		LANE TO		ELEVATION	
	(m)	PAL	(1)	(inches)	(n)	P&L	- 10	(inches)	(in)	P&L	- 60	(inches)	(in)	R&L		(inches)	(n)	P&L	(t)	(inches)
0+00	0.00		l	L	36.50				74.50				113.50			<del> </del>	150.00		l	<del> </del>
PRECON		5.31	99.91	2.16	·	5.26	90.96	2.52		5.15	100.07			5.09	100.13			5.00	100.22	
POSTCON	ļ	5.13	100.09		<u> </u>	5.05	100.17			4.96	100.24			4.92	100.30			4.85	100.37	<del> </del>
0+50	0.00		<del>                                     </del>		37.00	<del> </del>			63.00	· · · · · · · · · · · · · · · · · · ·			118.00			···	150.00			
PRECON		5.23	90,00	1.20		5.17	100.05	132	45.00	5.08	100.16	0.84	110.00	5.01	100.21	0.64	100,00	492	10030	0.48
POSTCON		5.13	100.06		<del>                                     </del>	5.06				4.90	100.23	***		4.94	100.28	177		4.88		
					1 .							· · · · · · · · · · · · · · · · · · ·		·····						1
1+00	0.00				37.00				B1.50				113.50				151.50			
PRECON		5.17		1.44	I	5.11		1.56		4.99	100.23	1.20		4.94	100.28	1.32		4.95	100.37	
POSTCON		5.05	100.17			4.98	100.24			4.90	100.33			4.83	100.39			4.76	100.48	
1+50	000				37.50			——— <del> </del> -	78.50				115.00				151.00			<del> </del>
PRECON		5,10	100.12	1.20		5.04	100.19	1.44	70~~	4.93	100.29	1,32		4.98	100.34	1.56	13.20	4.77	100.45	1,20
POSTCON		5.00				4.92	100.30			4.02	100.40			4.75	100.47	1.22		4.07	100.55	1
2+00	0.00				37.00				77.00				113.50				150.50			
PRECON		5.01		2.18		4.95	100.27	1.32		4.95	100.37	1.32		4.90	100.42	1.56		4.70	100.52	
POSTCÓN		4.92	100.30			4.84	100.38			4.74	100.48			4.67	100.55			4.50	100.63	
2+50	0.00				40.00	-			80.50			-	117.00			-	151.00			
PRECON		4.98	100.34	1.08		4.83	100.39	1.58		4.72	100.50	1.32		4.86	100.56	1.56		4.59	100.63	1.44
POSTCON		4.79	100.43			4.60	100.53			4.61	100.61			4.53	100.69			4.47	100.75	
3+00	0.00				38.00				74.50				114.00				150,00			
PRECON		4.90	100.42	0.96		4.74	100.49	1.44		4.84	100.58	1.20		4.60	100.62	1.56		4.51	100.71	1.32
POSTCON		4.72	100.50			4.82	100.60			4.54	100.68			4.47	100.75			4.40	100.82	
3+50	0.00				40.50			<del></del>	87.00				116.00				149.50			
PRECON		4.76	100,46	1.20		4.70	100.52	1.56	21,722	4.50	100.63	1.44		4.54	100.68	1.56	11222	4.45	100.77	1.20
POSTCON		4.66	100.56			4.57	100.65			4.47	100.75			4.41	100 B1		- 1	4.35	100.87	
4+00	0.00				43.50				82.50				117.50				148,00			
PRECON		4.66	100.56	1.20		4.80	100.62	1.56		4.51	100.71	1.44		4.47	100.75	1.80		4.39	100.84	1.32
POSTCON		4.56	100.66			4.47	100.75			4.39	100.83			4.32	100.90			4.27	100.95	<b></b> '
4+50	000		<del></del>		34.00				74.50		-		116.00				149.00			
PRECON		4.58	100,64	1.20		4,55	100.67	1.68		4,44	100.78	1.44		4.39	100 B3	1.90		4.29	100 93	1.20
POSTCON		4.48	100.74			4.41	100.81	-		4.32	100.90			4.24	100.98			4.10	101.03	
				·																
5+00	0.00				33.00				81.50				119.00	4 00	100.00		149.00		75.54	
PRECON		4.48 4.39	100.74	1.06		4.49	100.73	2.04		434	100.98	1.56		4.30	100.92	1.92		4.20 4.10	101.02	1.20
POSTCON		4.39	100.83			4.32]	100.90}			4.21	10101			4.14	101,08			4.10	101.12	

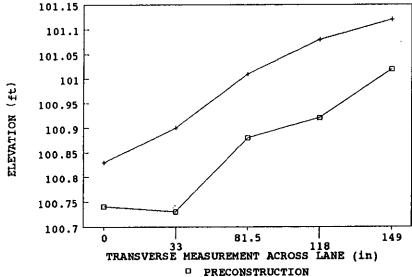
e e









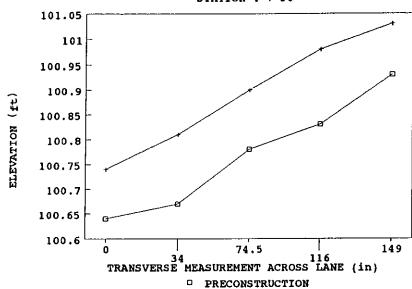


+ POSTCONSTRUCTION

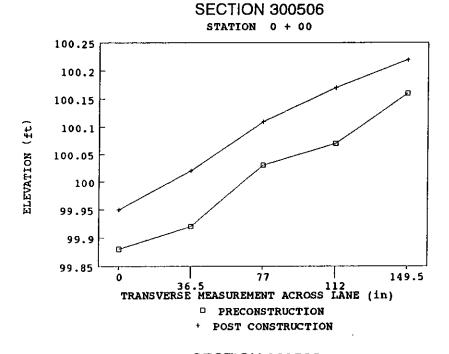
## **SECTION 300505**

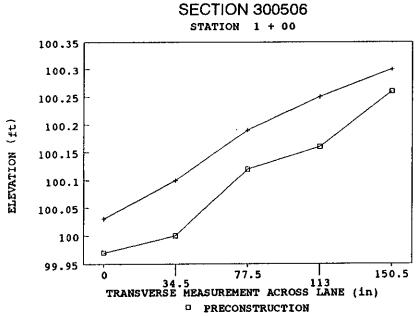
+ POSTCONSTRUCTION



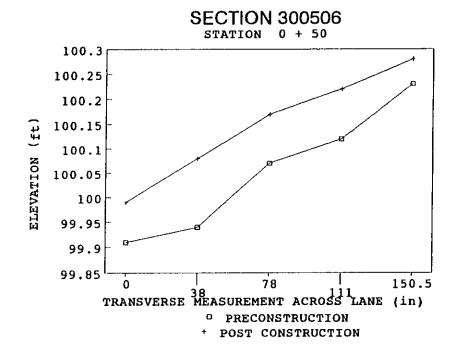


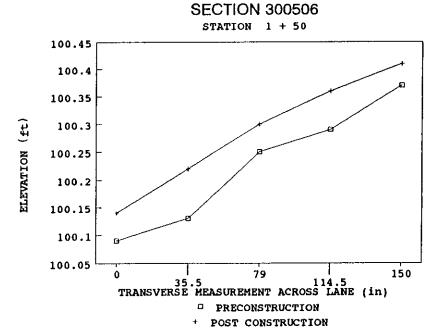
5.25	= HI PRECON = HI POSTCON				ASSUMED ELEV							PREPARATION, 2	INCH VIRGIN							
STATION	LANE TO		ELEVATION		OUTERWHE		ELEVATION	DIFFTHICK	CENTER		ELEVATION		IN WHEE		ELEVATION		LANE TO		ELEVATION	
	(in)	RAL	19	(Inches)	(in)	A&L	(1)	(inches)	(in)	A&L.	10	(inches)	(in)	P&L	ft)	(inches)	(in)	PAL	(1)	(inches)
0+00	0.00				36.50			l	77.00				112.00				149.50			<u></u>
PRECON		5.37		0.94		5.33				5.22		0.96		5.18		1.20		5.09		
POSTCON		5.30	99.95			5.23	100.02	<del></del>		5.14	100.11			5.08	100.17			5.03	100.22	4
0+50	0.00				38.00				78.00			<del>                                     </del>	111.00			i i	150.50		<del> </del>	<del> </del>
PRECON		5.34				5.31	99.94	1.69		5.18	100.07	1.20	l l	5.13		1.20		5.02		
POSTCON		5.26	99.90			5.17	100.08			5.08	100.17			5.03	100 22			4.97	100.28	4
1+00	0.00		1		34.50				77.50				113.00			· · · · · · · · · · · · · · · · · · ·	150.50		·	
PRECON		5.28		0.72		5.25	100.00			5.13		0.84		5.09	100,18	1.08		4 00		
POSTCON		5.22	100.03			5.15	100.10			5.06	100.19			5.00	100.25			4.95	100.30	
1+50	0.00		t		35.50			├ <b></b>	79.00				114.50				150.00	<del></del>	<del>                                     </del>	<del> </del>
PRECON		5.18		0.80		5.12	100.13			5.00	100.25	0.60		4.96	100.29	0.84		4.99		
POSTCON		5.11	100.14			5.03	100.22			4.95	100.30			4.89	100.36			4.84	100.41	
2+00	0.00		<del>[</del>		35.00			·	77.00				113.50				151.00		· · · · · · · · · · · · · · · · · · ·	f
PRECON		5.(1		0.84		5.06	100.19 100.29	1.20		4.95	100.30	0.96		4.90		1.20		4.82	100.43	
POSTCON		5.03	100.22			4.98	100.29			4.97	100.38			4.90	100.45			4.74	100.51	
2+50	0.00		<del> </del>		38.00			<u> </u>	76.00				114.00			+	149.50		<b>:</b>	
PRECON		5.10	100.15	120		5.06	100.19	1.90		4.96	100.29	1.56		4.91	100.34	1.92		4.82		
POSTCON		5.00	100.25			4.91	100.34			4.83	100.42			4.75	100.50			4.70	100.55	
3+00	0.00		<del></del>		36.00				79.00	<del> </del>			113.00			<del></del> }	150.00		·····	<del> </del>
PRECON		5.02	100.23	1.20		4.97	100.29	1.56		4.87	100.38	1.44		4.82	100.43	1,68		4.73	100.52	1.32
POSTCON		4.92	100.33			4.84	100.41			4.75	100.50			4 86	100.57			4.62	100.63	
3+50			<del> </del>		38.50			<del>-</del>	79.00				114.00			+	150.00			
PRECON		4.95		1.20		4.92	100.33	1.80		4.80	100.45	1.44		4.75	100.50	1.56		4.67	100.58	1.20
POSTCON		4.95	100.40			4.77	100.48			4.69	100.57			4.62	100.63			4.57	100.68	
4+00	0.00				32.00				78.50		<del></del>	<u>-</u>	115.00				150.00			<del> </del>
PRECON		4.83		0.98		4.78	100.47	1.08		4.67	100.58	0.84		4.53	100.62	1.20		4.54	100.71	0.00
POSTCON	$\overline{}$	4.75	100.50			4.60	100.58			4.50	100.65			4.53	100.72			4 49	100.78	
4+50	- 0.00				37.50				80.00				114.00				149.00			<del></del>
PRECON		4.75	100.50	0.96		4.71	100.54	1.32		4.61	100.64	1.08		4.56	100.69	1.20		4.47	100.78	0.60
POSTCON		4.67	100.58			4.80	100.65			4.52	100.73			4.48	100.79			4.42	100.83	
5+00	0.00		-		36.00	-	<del></del>	<del></del>	80.50				115.50				149.00			
PRECON		4.64	100.61	0.72		4.60	100.65	1.20	-	4.50	100.75	0.96		4.48	100.79	1.09		4.38	100.97	0.72
POSTCON		4.58	100.67			450	100.75			4.42	100.83			4.37	100.80			4.32	100.93	

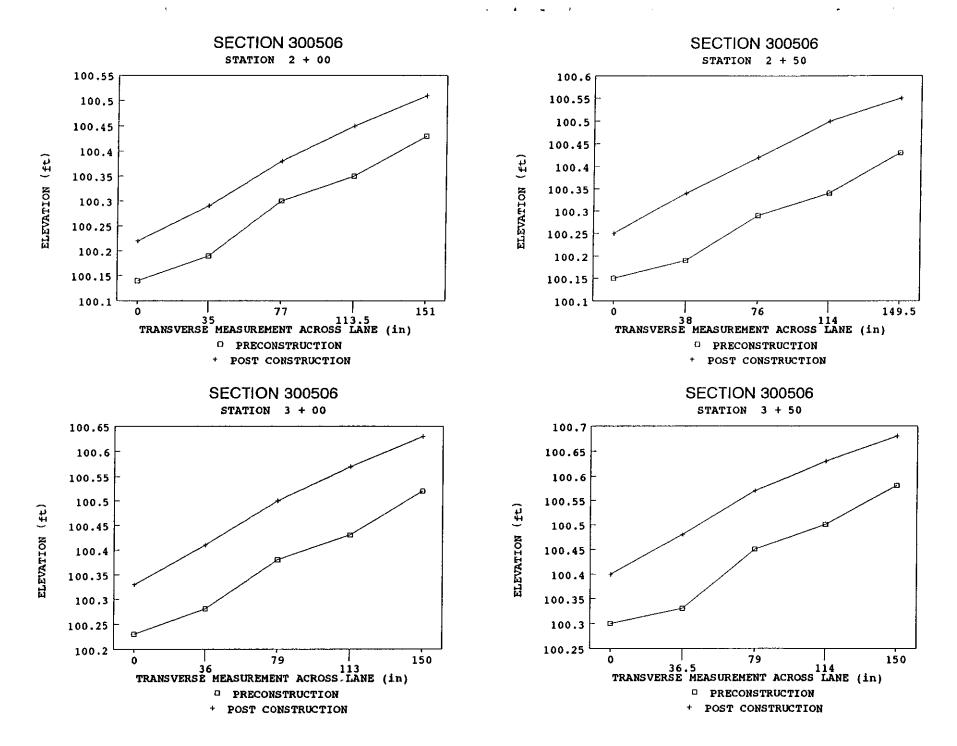


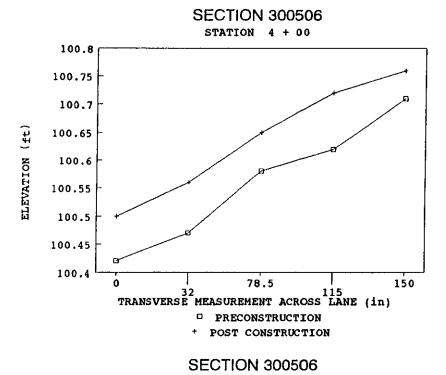


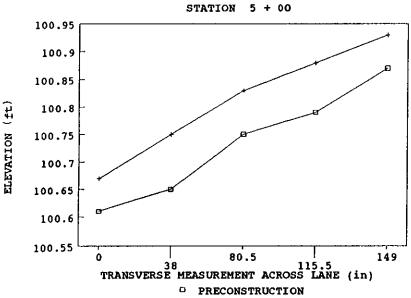
+ POST CONSTRUCTION



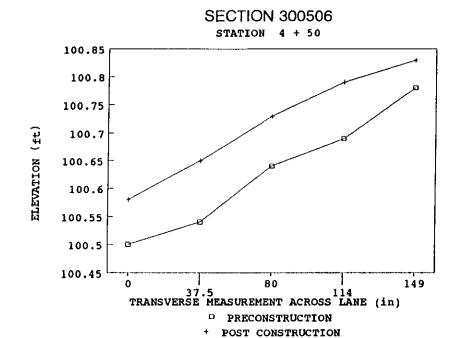






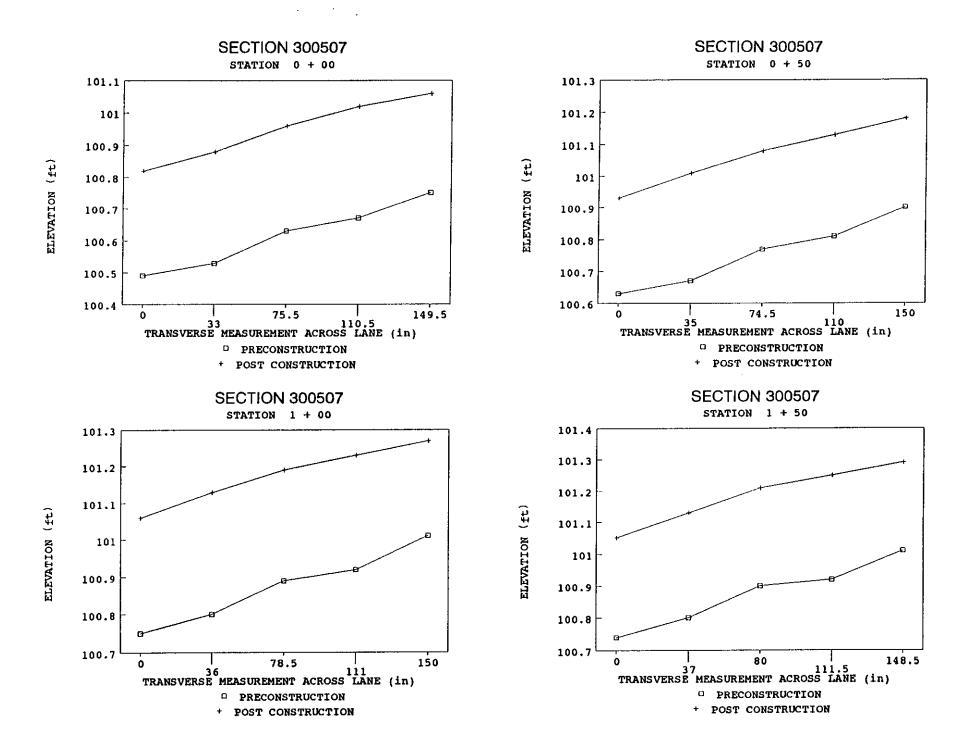


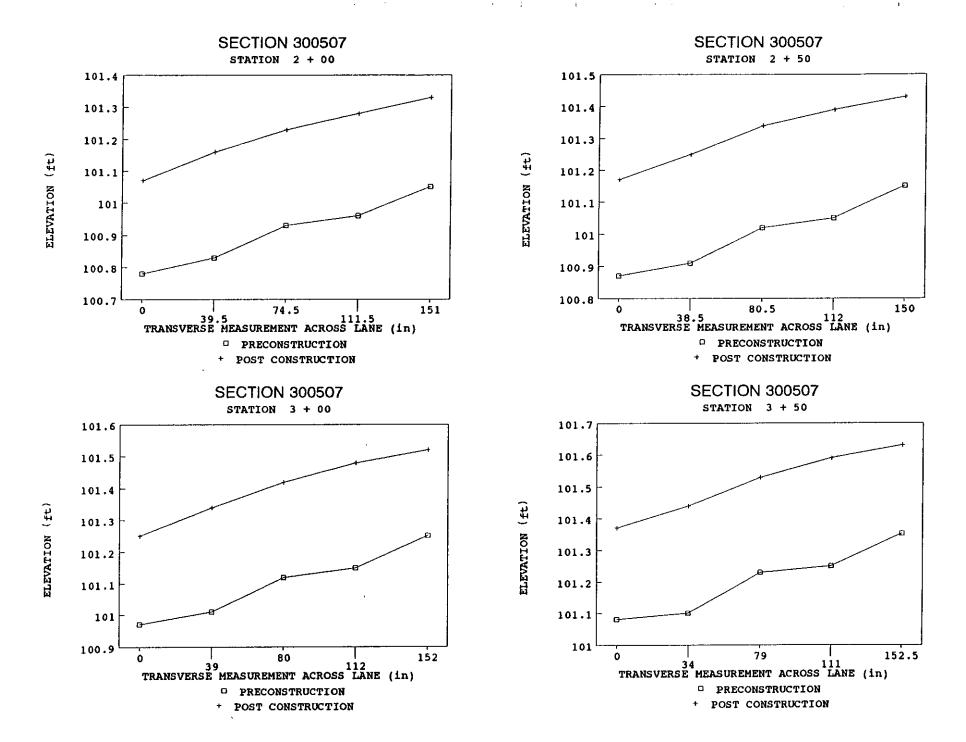
+ POST CONSTRUCTION

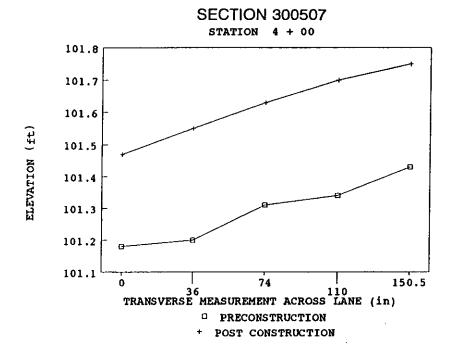


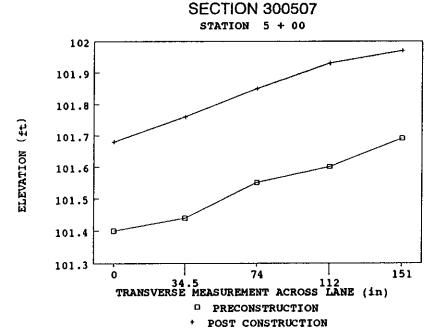
	# HI PRECON # HI POSTCON				140 m 45 0 5 : 5 :							. BIGTIMBER, M								
STATION STATION	LANE TO		FIEVATION	DIFTHEK	ASSUMED ELEV		00 FT ELEVATION	PRESTURE 1	CENTER			PREPARATION 5	INCH VIRGIN IN WHEEL	Deni-	I FIEWARON	DIFFTHICK	LANE TO	( said	ELEVATION	I AITTURE
	(In)	PAL	16	(inches)	(in)	A&L	74	(inches)	(h)	P&L	ELEVATION	(inches)	(in)	RAL.	ELEVATION	(Inches)	(n)	PAL	FIE VALIDA	(inches)
0+00	0.00		***	1-10-10-37	33.00	<u>:Mb</u>	19	(#1047#2)	75.50	TRAL	19	(H KATAFA)	110.50	HOL	19	(B.KSHOR)	149.50	mar.	79	(escres)
PRECON		5.2	5 100.49	3.96		5.22	100.53	4.20		5.12	100.63	3.96	110.00	5.08	100.67	4.20	140.00	5.00	100 75	3.72
POSTCON		5.2				5.18	100.88	7.45		5.10	100.96			5.04			-	5.00		
												<del>                                     </del>							10120	
0+50	0.00				35.00				74.50			<del></del>	110.00		<del></del>	<del> </del>	150.00		<del>                                     </del>	
PRECON		5.1	2 100.63	3.80		5.08	100.67	4.08		4.98	100.77	372		4.94	100.61	3.64		4.85	100.90	3.36
POSTCON		5.13	3 100.93			5.05	101.01			4.99	101.00			4.93				4.00	101.18	
1+00	0.00		+		36 00				79.50				111.00				150.00			├──
PRECON		5.0	0 100.75	3.72		4.95	100.80	3.96		4.86	100.99	3.60		4.63	100.92	372		4.74	101.01	3.12
POSTCON		5.00	101.06			4.93	101.13			4.87	101.19			4 B3				4.79		
1+50	0.00		<del> </del>	·	37.00			<del></del>	80.00				111.50			<del> </del>	148.50			·
PRECON		5.0	1 100.74	3.72		4.95	100.80	3.26		4.85	100.90	3.72		4.83	100.92	3.96		4.74	101.01	3.36
POSTCON		5.0		5.72		4.93	101.13			4.95	101.21			4.81	101.25	0.20		4.77	101.29	
2+00	0.00		+		39.50				74.50				111.50				151.00			
PRECON		4.97	100 78	3.96		4.92	100.83	326		4.82	100.93	3.60	111.50	4.70	100.96	3.64	131.00	4.70	101.05	3.36
POSTCON		4.94		44-	İ	4.90	101.18			4.B3	101.23			4.78	101.26	0.04		4.73		
2+50	0.00		+	<del></del>	38.50	···· ····			90.50				112.00				150.00			
PRECON	****	4.96	100,87	3,80		4.84	100.91	4.08		4.73	101.02	3.84		4.70	101.05	4.08		4.60	101,15	3.36
POSTCON		4.86				4.B1	101.25	7.44		4.72	101.34			4.67	101.39			4.63	101.43	
3+00	0,00		<del>  </del>		39.00				80.00				440.00				152.00			
PRECON	0.00	4.78	100.97	3.36	39.00	4.74	101.01	3.96	80,00	4.63	101.12	4.90	112.00	4 60	101.15	3.96	152.00	4.50	101.25	3 24
POSTCON	<del></del>	4.81		3.30		4.72	101.34	320		454	101,12	750		4.58	101.15	320		4.54	101.52	3 23
700,000		7.41	101.20							7.07	101.02	<del></del>			101.40					
3+50	0.00		+		34.00	1	1		79.00				111.00			· ···	152.50			
PRECON		4.57	101.08	3,48		4.65	101.10	4.08		4.52	101.23	3.60	11,1:24	4.50	101.25	4.08	100.00	4.40	101.35	3.36
POSTCON		4.60	101.37			4.62	101.44			4.53	101.53			4.47	101.59			4.43	101.63	
4+00	0.00		+		36.00				74.00		<del></del> i		110.00				150:50			
PRECON		4.57	101.18	3.48		4.55	101,20	4.20		4,44	101.31	3.84	1,0,00	4.41	101.34	4.32		4.32	101.43	3.94
POSTCON		4.50				4.51	101.55			4.43	101.83			4.36	101.70	1.02		4.31		
4+50	0.00		·		39.00				74.50				112.00				151.50			
PRECON		4.44	101.31	3.00	80.00	4.40	101.35	3.48		4.29	101.46	4.32	712.00	4.25	101.50	3.48	131.30	4.16	101.59	2.88
POSTCON		4.50		5.55		4.42	101.64	3.45		4.24	101.92	7.52		4.27	101.79	3.70		4.23	101.83	
5+00	000				34.50				74.00				112.00				151.00			
PRECON		4.35	101,40	3.36	34.30	431	101.44	3.84	74.00	4.20	101.55	3.50	112.00	4.15	101.60	3.96	15170	4.06	101.69	3.36
POSTCON	<del></del>	436		9,50		430	101.76	3.57	-	4.21	101.85	350	<del></del>	7:13	101.93	3.50		4.00	101.97	3.30
. 501001			1			7,00	101.70	<del></del>			10.00			7,10]	17 ( #3)			7.00	10,5/	

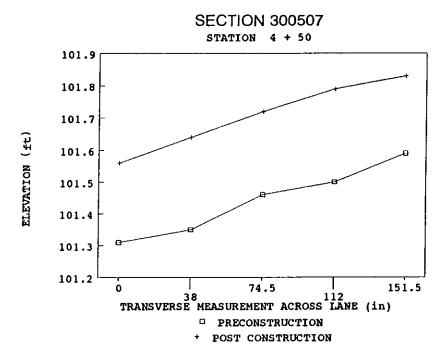
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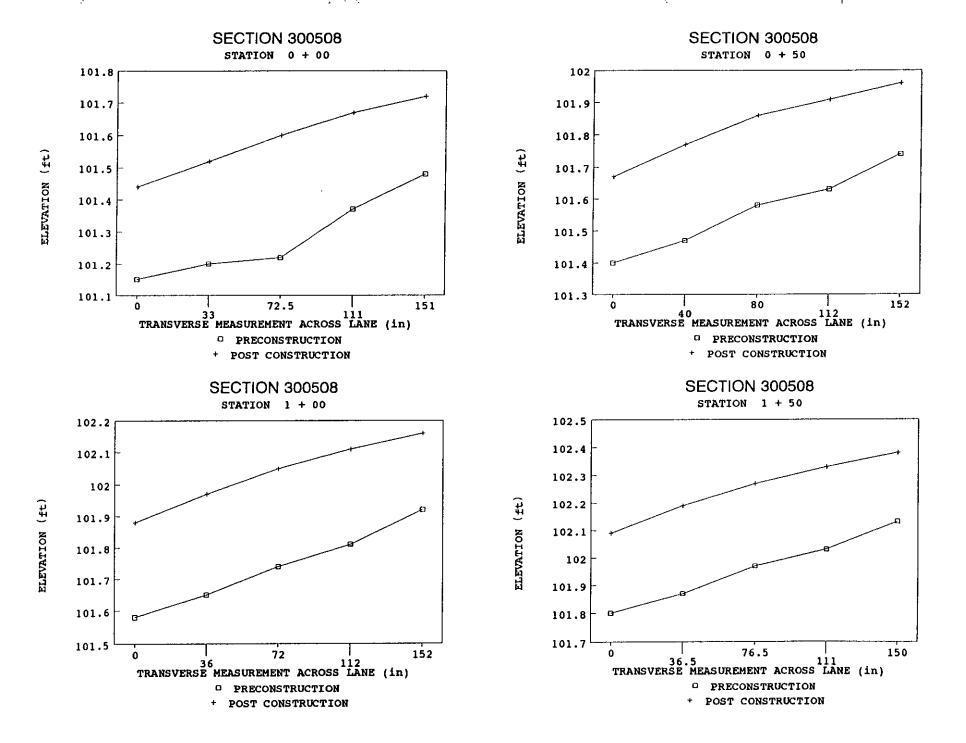


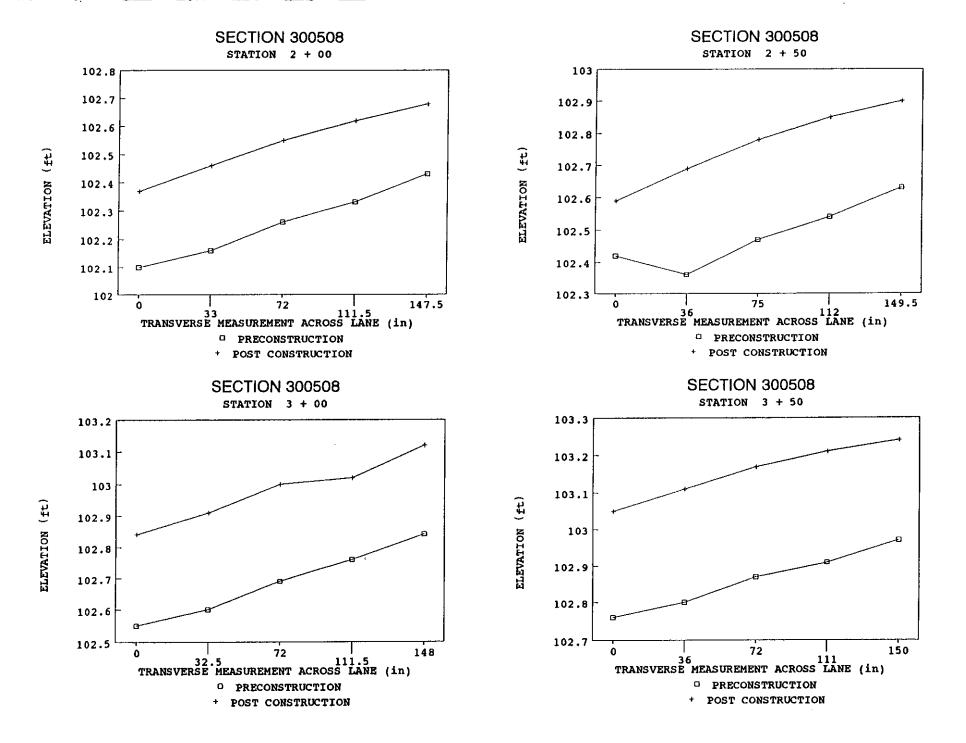


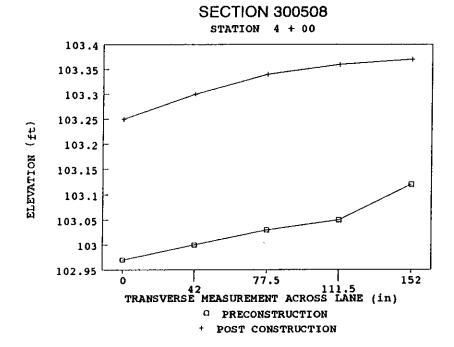


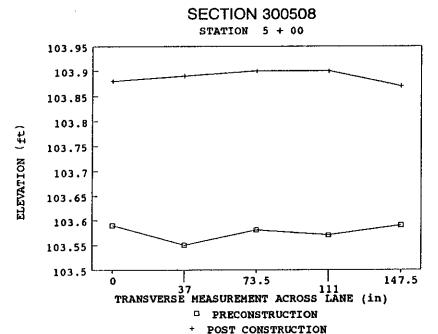


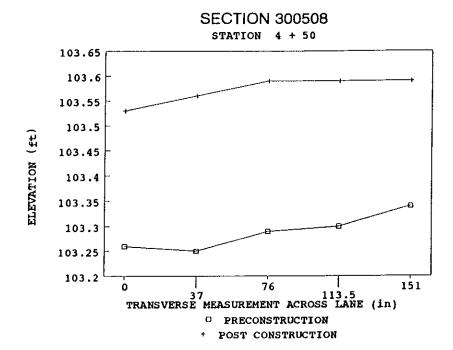
	= HI PRECON ■ HI POSTCON					VATION OF 100	00 ET					BIG TIMBER, M						•		
STATION	LANE TO		ELEVATION	DIFFTHICK	OUTERWAL			DIFFTHICK	CENTER		ELEVATION	PREPARATION S	IN WHEEL		ELEVATION	DIFFTHICK	LANE TO	LANE	ELEVATION	DETHIC
	(6)	PALL	10	(inches)	(in)	ALL	60	(inches)	(6)	PAL	40	(inches)	(in)	ALL.	46	(inches)	(n)	P&L	6	(inches)
0+00	0.00		<del>                                     </del>	<u> </u>	33.00		- ''	1	72.50				111.00		1.4	15.5.57	151.00		11	
PRECON		6.25	101.15	3.48		6.20	101.20	3.84		8.19	101.22	4.56	77,134	6.03	101.37	3.60	74.1.4	5.92	101.48	21
POSTCON		5.97	101,44			5.69	101.52		1	5.91	101.60			5.74				5.69		
0+50	0.00		<del></del>	ļ ·	40.00			<del></del>	80.00			<del>i                                    </del>	112.00				152.00			
PRECON		6.00	101.40	3.24		5.93	101.47	3.60		5.82	101.58	3.36	118.40	5.77	101.63	3.36	102.00	5.86	101.74	2.6
POSTCÓN		5.74				5.64	101.77	100		5.55	101.86	- 0.50		5.50	101.91	940		5.45		<u></u>
1+00	000		ł		36.00				72.00				112.00				152.00			
PRECON		5.82	101.58	3.60		5.75	101.65	3.84	72.00	5.66	101.74	3.72	112.00	5.50	101.91	3.60	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	5.48	101.92	2.6
POSTCON		5.53				5.44	101.97			5.36	102.05	5.76		5.30	102.11	- 3.20		5.25		
1+50	0.00		<del>                                     </del>		36.50				76.50				111.00				150.00			
PRECON		5.60	101.80	3.48	\$4.20	5.53	101.87	3.84	79.50	5.43	101.97	3.60	111.001	5.37	102.03	3.60	130.00	5.27	102.13	3.0
POSTCON		5.32		9.3.0		5.22	102.19	424	+	5.14	102.27	3,00	<del>-</del> -	5.08	102.03	3,50		5.03		
				i		· · · · · · · · · · · · · · · · · · ·			T T			···								
2+00	0.00		1		33.00				72.00				111.50				147.50			
PRECON		5.30		3.49		5.24	102.18	3.60		5.14	102.26	3.48		5.07	102.33	3.48		4.97	102.43	3.0
POSTCON		5.04	102.37			4.95	102.48			4.86	102.55			4.79	102.62			4.73	102.69	
2+50	0.00		<del> </del>		36.00				75.00			-	112.00			+	149.50			
PRECON		4.98	102.42	2.04		5.04	102.36	3.96		4.93	102.47	3.72		4.96	102.54	3.72		4.77	102.63	3.2
POSTCON		4.82	102.59			4.72	102.89			4.63	102.78			4.56	102.85			4.51	102.90	
3+00	0.00				32.50				72.00				111.50			<del></del>	148.00			
PRECON	0.00	4.85	192,55	3.46	92.30	4.80	102.60	3.72	72.00	4.71	102.69	3.72	11130	4.64	102.78	3,12	140.00	4.56	102.84	33
POSTCON		4.57		3.40		4.50	102.91	3.72		4.41	102.59	3.12		4.39	103.02	2.12		4.29	103.12	
	0.00								72.00											
3+50 PRECON	0.00	4.64	102.76	3 48	36.00	4.80	102.80	3.72	/2.00	4 53			111.00				150.00			
POSTCON		4.36		3.46		4.30		3.72			102.87	3.60		4.49	102.91	3.60		4.43	102.97	3.2
POSICON	<del></del>	9,30	103.05			4.30	103.11			4.24	103.17	· · · · · · · · · · · · · · · · · · ·		4.20	103.21			4.17	103.24	
4+00	0.00				42.00				77.50				111.50			<del></del>	152.00			
PRECON		4.43	102.97	3.36		4.40	103.00	3.60		4.37	103.03	3.72		4.35	103.05	3.72		4 28	103,12	3.0
POSTCON		4.16	103.25			4.11	103,30			4.07	103.34			4.05	103.38			4.04	103.37	
4+50	0.00		<del>                                     </del>		37.00				78.00				113.00				151.00		<del>-</del>	
PRECON		4,14	103.26	3.24		4,15	103.25	3.72		4.11	103.29	3.60		4.10	103.30	3.48		4.06	103.34	3.0
POSTCON		3.66				3.95	103.56		,	3.82	103.59			3.82	103.50			3.82	103.59	
5+00	0.00			+	37.00				73.50				111.00				147.50			
PRECON		3.81	103.56	3.48	37.00	3.95	103.55	4.08	, 4.30	3.82	103.58	3.64	117.00	3,83	103.57	3.98	177.30	3.81	103.59	3.36
		3.53		V.70	<del></del>	3.52	103.89	7,00	<del></del>	3.51	103.20			3.51		3.40	<del></del>			
POSTCON		3.53	103.88			3.52	103.89			3.51)	103.90			3.51	103.90		I	3.54]	103.87	





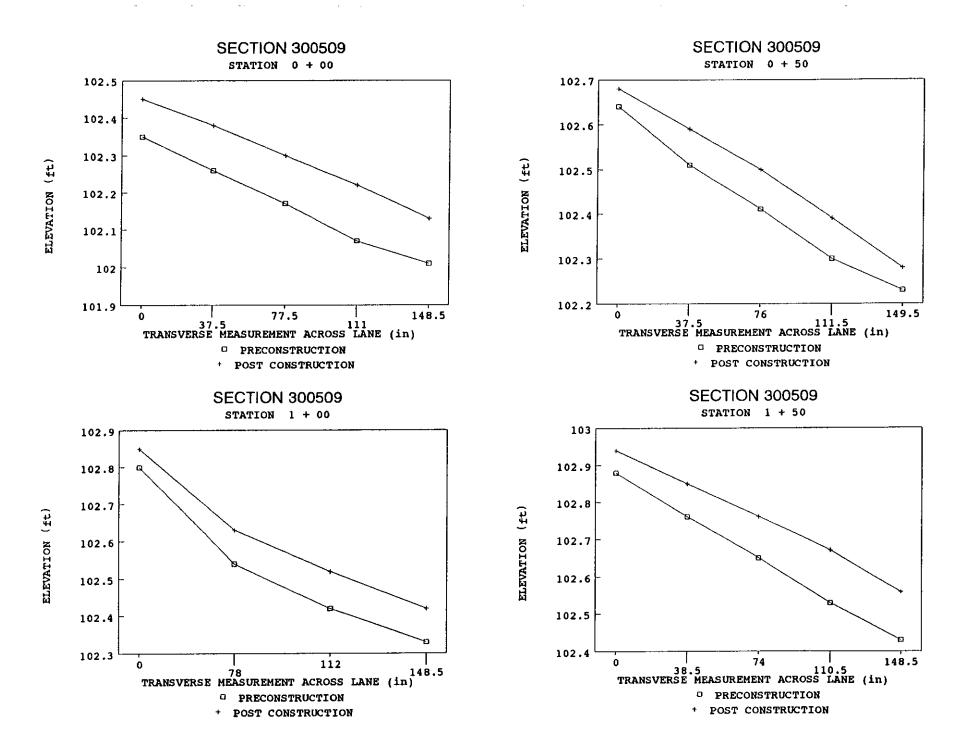


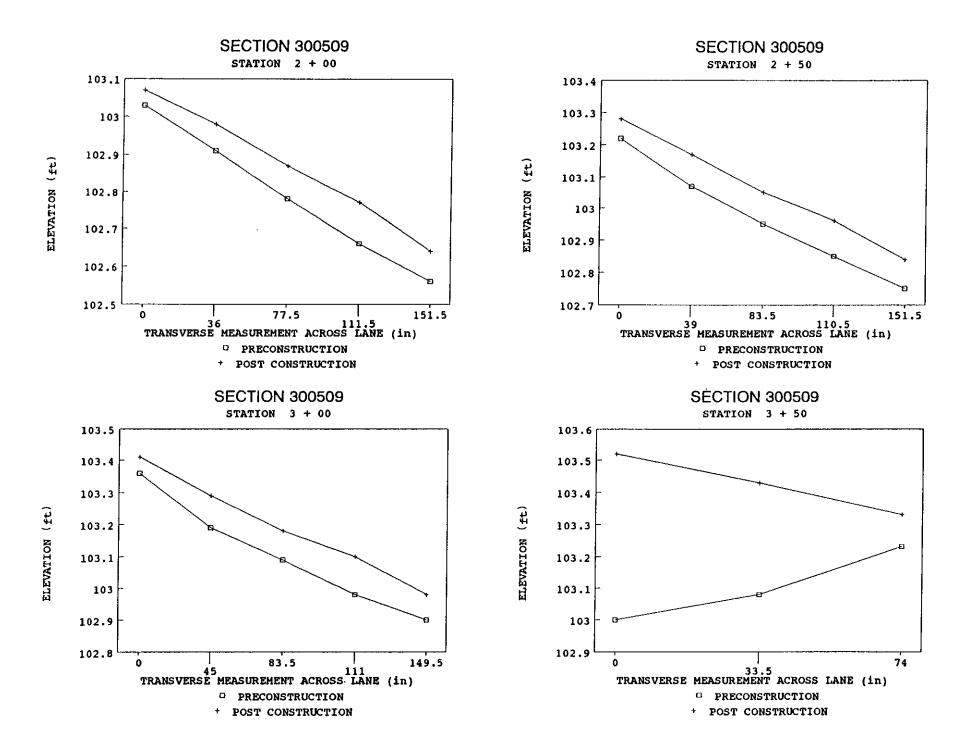


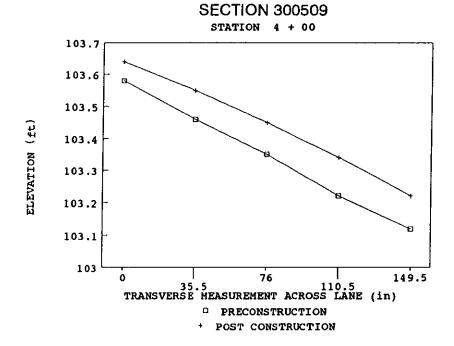


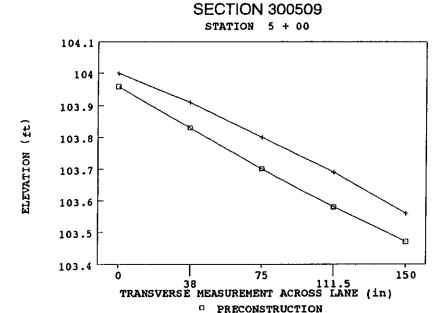
8.16	= HI PRECON = HI POSTCOI				VATION OF 100.					SECTION 3005		. BIG TIMBER, N PREPARATION		 E						-
STATION	LANE TO		ELEVATION		OUTER WHEEL		ELEVATION		CENTER	UNE	ELEVATION	DIFFTHICK	IN WHEEL I		ELEVATION	DIFFTHICK	LANE TO		ELEVATION	DIFFTHICK
	(in)	PAL	- fo	(inches)	(n)	A&I.	(9)	(inches)	(n)	A& L	(0)	(Inches)	(m)	FAL	(0	(inches)	(6)	R&L	10	(inches)
0+00	0.00	[			37.50				77.50				111.00			1	148.50			
PRECON		5.19		1.20		6.28			l	6.37	102.17			6.47	102.07			6.53	102.01	1.4
POSTCON		5.71	102.45			5.78	102.38	<del>                                     </del>	i	5.98	102.30	<b></b>		5.94	102.22			6.03	102.13	
0+50	0.00				37.50			<u> </u>	76.00				111.50			<del>                                     </del>	149.50			
PRECON		5.90		0.49		6.03				8.13		1.08		6.24			T	631	102.23	0.6
POSTCON		5.48	102.68			5.57	102.59			5.66	102.50			5.77	102.39			5.98	102.28	
1+00	0.00		-		36.00			l	79.00			<del>                                     </del>	112.00	· ·			148.50			
PRECON		5.74		0.60		5.76	102.78	-0.24		6.00	102.54	1.08		6.12	102.42		- 1	6.21	102.33	1.00
POSTCON		5.31	102.85			5.40	102.76			5.53	102.63			5.64	102.52			5.74	102.42	
1+50	0.00		<del> </del>		38.50			<del>                                     </del>	74.00		· · · · - ·	<del> </del>	110.50			· · · · · · · · · · · · · · · · · · ·	149.50			
PRECON		5.66	102.88	0.72		5.78	102.78	1.06		5.89	102.65	1.32		6.01	102.53	1.69		6.11	102.43	1.50
POSTCON		5.22	102.94			531	102.95			5.40	102.76			5.49	102.67			5.60	102.56	
2+00	0.00				36.00				77.50			<del>  </del>	111.50				151.50			
PRECON		5.51		1.20		5.63	102.91	0.94		5.76	102,78	1.08	777.20	5.99	102.66	1.32		5.99		0.94
POSTCON		5.09	103.07			5.18	102.98			5.29	102.87			5 39	102.77			5.52	102.64	
2+50	0.00				39.00	····-			83.50				110.50			·	151.00			
PRECON		5.32	103.22	0.72		5.47	103.07	1.20		5.59	102.95	1.20		5.69	102.95	1.32		5.79	102.75	1.08
POSTCON		4.98	103.28			4.90	103.17			5.11	103.05			5.20	102.98			5.32	102.94	
3+00	0.00		<del></del>		45.00				83.50				111.00				149.00			
PRECON		5.18	103.36	0.60	1	5,35	103.19	1.20		5.45	103.09	1.06	7,1,1,00	5.36	102.98	1.44	, ,,,,,,,	5.64	102.90	0.00
POSTCON		4.75	103.41			4.87	103.29			4.99	103.18			5.06	103.10			5.18	102.98	
3+50	0.00		<del></del>		33.50			-	74.00				113.50			-	148.00			
PRECON		5.54	103.00	6.24	*	5.48	103.08	4.20		5.31	103.23	1.20	170.00	5.19	103.35	-1.56	1,0,00	5.08	103.46	-4.20
POSTCON		4.64	103.52	.,,		4.73	103.43			4.83	103.33			4.94	103.22			5.05	103.11	
4+00	0.00	······································			35.50				78.00	i			110.50				149.50	$\longrightarrow$		
PRECON		4.96	103.58	0.72		5.08	103.46	1.08		5.19	103.35	1.20		5.32	103.22	1.44		5.42	103,12	1,20
POSTCON		4.52	103.64			481	103.55			4.71	103.45			4.82	103.34			494	103 22	
4+50	0.00				36.00				80.50	-			112.50				150.00			
PRECON		4.75	103.79	0.00		4.97	103.67	0.98		4.90	103.55	0.96		5.13	103.41	1.44		5.21	103.33	0.84
POSTCON		4.32	103.84			4.41	103.75			453	103.63			4.63	103 53			4.76	103.40	
5+00	0.00				38 00				75.00				111.50				150.00			
PRECON		4.56	103.96	0.48		4.71	103.83	0.98		4.84	103.70	1.20	.,,,	4.98	103.58	1,32		5.07	103.47	1.06
POSTCON		4.16	104.00			4.25	103.91			4.36	103.90			4.47	103.80		-	4.00	100.56	

 $1 \leq i \leq k$ 

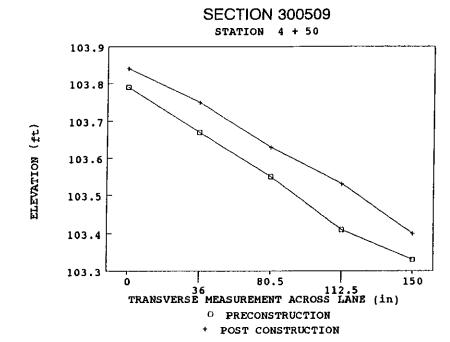




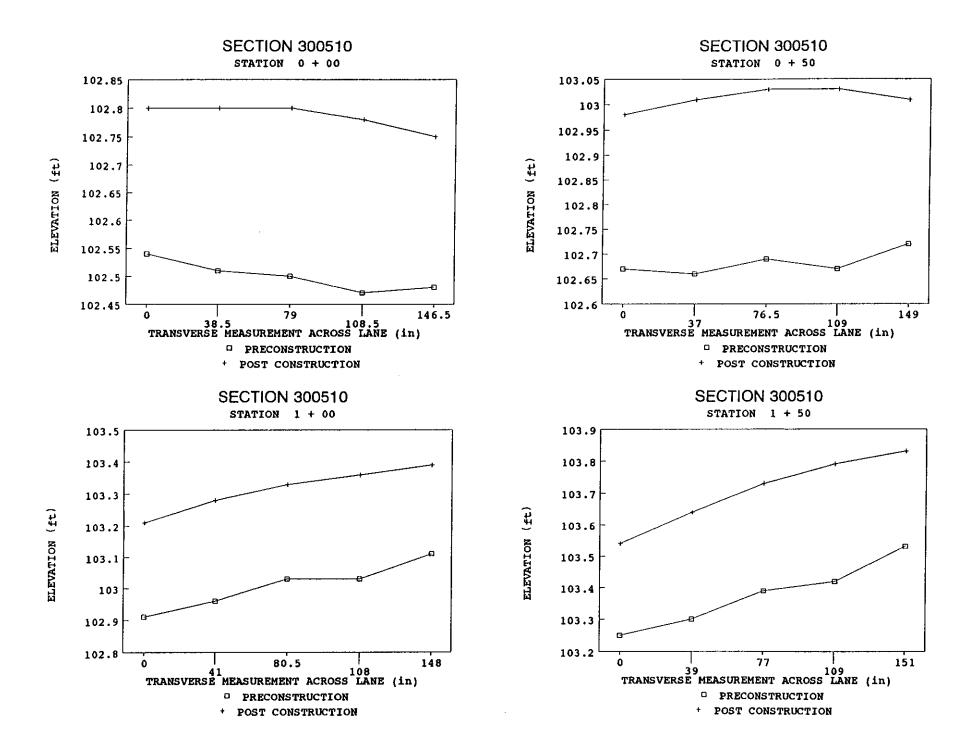


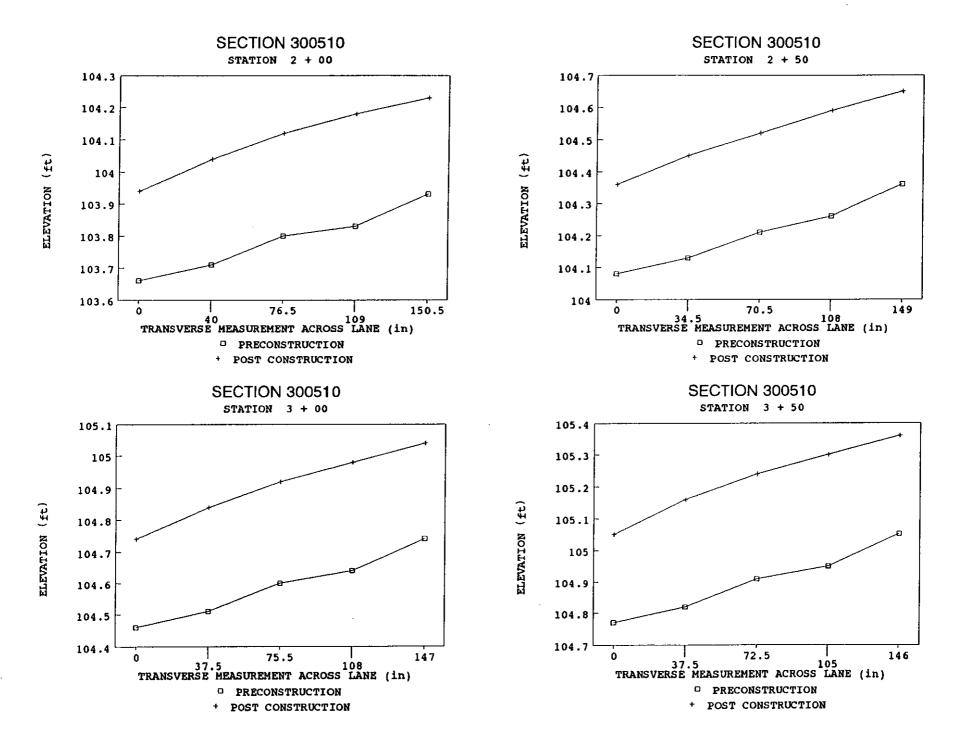


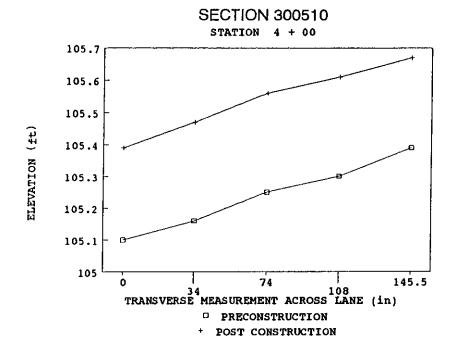
+ POST CONSTRUCTION

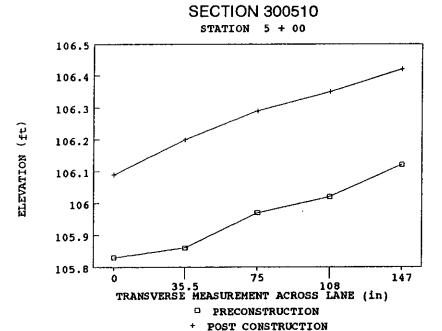


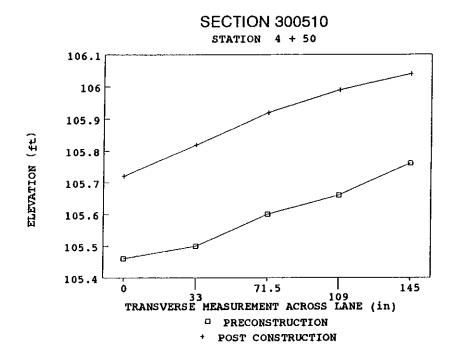
	= HI PRECON = HI POSTCON			ASSUMEDELE	VATION OF 100	00 FT						BIGTIMBER, M		T						
STATION	LANE TO	EDGE			OUTER WHEEL		ELEVATION	DIFTHICK	CENTER			DIFFTHICK	IN WHEEL		ELEVATION	DIFFTHICK	LANE TO	LANE	ELEVATION	
	(n)	A&L	70	(inahes)	(in)	P&L	(t)	(inches)	(m)	PAL	(9)	(inches)	(in)	A&L	(1)	(inches)	(In)	RAL	(1)	(inches)
0+00	0.00				39.50				79.00				108.50				146.50			
PRECON		5.81	102.54	3.12		5.B4	102.51	3.48	· ·	5.85	102.50		↓	5.66	102.47	3.72		5.87	102 48	3.24
POSTCON		5.07	102.80		l .	5.97	102.90			5.97	102.90	<del>                                     </del>		5.99	102.78	-		6.02	102.75	
0+50	0.00				37.00				76.50			<del> </del>	100.00				149.00			
PRECON		5.69	102.67	3.72		5.69	102.66	4.20	,,,,,,,	5.66	102.69	4.08		5 68	102.67	4.32	1.4.22	5.63	102.72	3.48
POSTCON		5.79			t	5.76	103.01			5.74	103.03	<del> </del>		5.74	103.03			5.76	103.01	
					1															
1+00	0.00				41.00				90.50				109.00				148.00			
PRECON		5.44		3.60		5.39	102.96			5.32	103.03	3.60		5.32	103.03	3.96		5.24	103.11	3.36
POSTCON		5.58	103.21			5.49	103.29	-		5.44	103.33			5,41	103.36			5.38	103,39	ı———
1+50	0.00				39.00			<del></del>	77.00			<del>                                     </del>	109.00				151.00			
PRECON	0.04	5.10	103.25	3.40		5.05	103.30	4.08	17.57	4.96	103.39	4.08	- 133	4.93	103.42	4.44		4.92	103.53	3.50
POSTCON		5.23				5.13	103.64		İ	5.04	103.73			4.98	103.79			4.94	103.B3	
2+00	0.00				40.00				76.50				109.00				150.50			
PRECON		4.89	103.66	3.12		4.64	103.71	3.96		4.55 4.65	103.80	3.94		4.52 4.50	103.93	4.20		4.42	103.93	3.60
POSTCON		4.83	103.94			4./3	104.04			9.00	104.12			9.79	104.18				104.23	
2+50					34.50				70.50				108 00				149.00			
PRECON		4.27	104.08	3.36		4.22	104.13	3.94		4.14	104.21	3.72		4.09	104.26	3.96		3.90	104.36	3.48
POSTCON	İ	4.41	104.36			432	104.45			4.25	104.52			4.18	104.59			4.12	104,65	
3+00	0.00				37.50				75.50				109.00				147.00	3,61		
PRECON		3.89	104.46	3.36		3.84	104.51	3.98		3.65	104.70	2.54		3.71 3.79	104.64	4.08	i	3.73	104.74 105.04	3.60
POSTCON		4.03	104.74			3.93	104.84			3.95	104.92	·		3.79	104,96			3.73	100.04	
3+50	0.00				37.50			<del></del>	72.50			-	105.00				146.00			
PRECON		3.59	104.77	3.36	3,25	3.53	104.82	4.08		3,44	104.91	3.96	100.00	3,40	104.95	4.20		3.30	105.05	3.72
POSTCON		3.72	105.05			3.01	105.16			3.53	105.24			3.47	105.30	i		3.41	105.36	
4+00	0.00			·	34.00				74.00				109.00			372	145.50			
PRÉCON		3.25	105.10	3.49		3.19	105.16	3.72		3.10	105.25	3.72		3.05	105.30	3.72		2.98 3.10	105.39 105.67	3.36
POSTCON		3.38	105.39			3.30	105.47			3.21	105.56			3.16	100.61			3.10	100.67	
4+50	0.00				33.00				71.50		-		109.00	-		<del></del>	145.00	<del>-</del>		
PRECON		2.89	105.46	3.12		2.85	105.50	3.84		2.75	105.60	3.94		2.59	105.56	3.98		2.59	105.76	3.36
POSTCON		3.05	105.72			2.65	105.92			2,65	105.92			2.78	105.99			2.73	106.04	
								1	Ì											
5+00	0.00				35.50				75.00				108.00				147.00			
PRECON		2.52	105.83	3.12		2 49	105.86	4.08		2.38	105.97	3.84		2.33	106.02	3.98		2.23	106.12	3.60
POSTCON		2.69	106.09		1	2.57	108.20			2.48	106.29		l.	2.42	105.35		<u>l</u>	2.35	108.42	





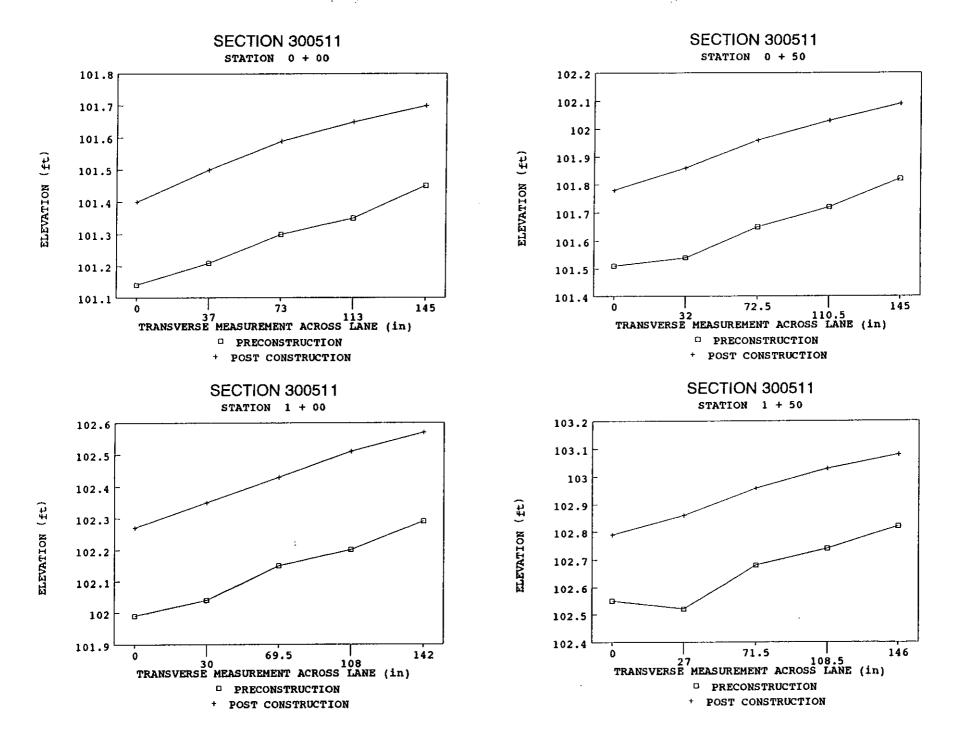


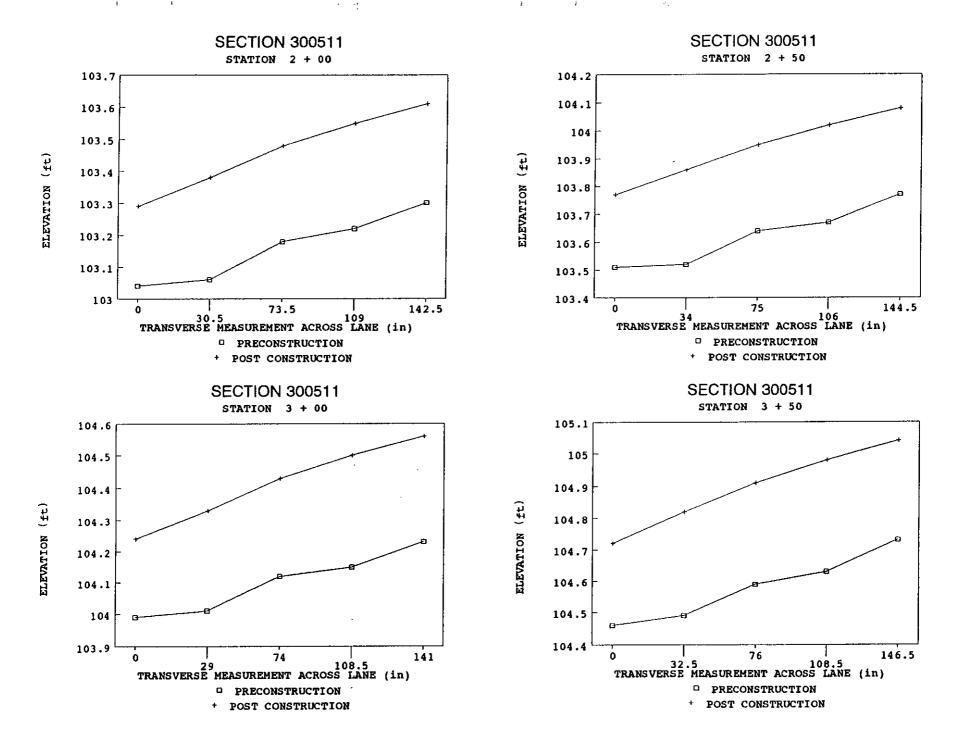


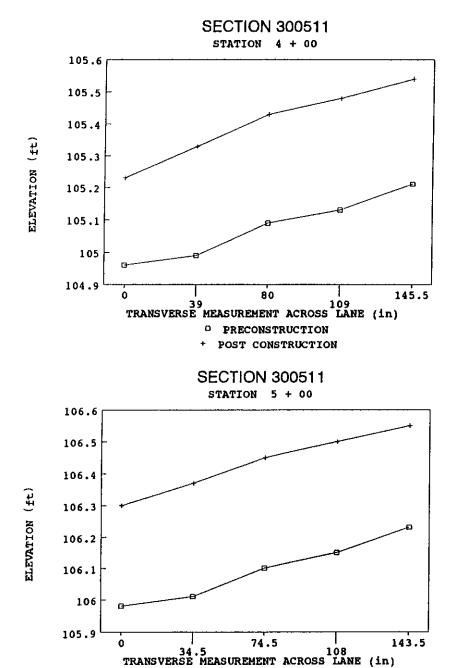


	= HI PRECON * HI POSTCON			ASSUMED ELEV	VATION OF 100.	00 FT						BIGTIMBER N								
STATION	LANE TO				OUTER WHEEL		ELEVATION		CENTER			DIFF THICK	IN WHEEL	PATH	ELEVATION	DIFF THICK	LANE TO		ELEVATION	DIFFTHICK
	(n)	A&L	10	(inches)	(in)	A&L	<b>(</b> 0	(inches)	(n)	PALL	10	(inches)	(in)	P&L	(9	(inches)	(in)	P&L	10	(Inches)
0+00	0.00				37.00				73.00				113.00				145.00			1
PRECON		6.88		3.12		5.81	101.21	3.48		6.72	101.30	3.48		6.67	101.35	3.60		6.57	101.45	3.00
POSTCON		6.43	101.40		l i	6.33	101.50			6.24	101.59			6.18	101.65			6.13	101.70	——
0+50	0.00	··	<del> </del>		32.00				72.50				110.50			<del></del>	145.00			
PRECON		6.51	101.51	3.24		6.49	101.54	3.84		8.37	101.65	3.72		6.30	101.72	3.72		6.20	101.B2	3.24
POSTCON		6.05	101.78			5.97	101.96			5.87	101.98			5.80	102.03			5.74	102.09	
1+00	0.00				30.00				69.50				108.00				142.00			<del></del>
PRECON		6.03		3.36	T T	5.98	102.04	3.72		5.87	102.15	3.36		5.82	102 20	3.72		5.73	102.29	3.36
POSTCON		5.56	102.27			5.48	102.35			5.40	102.43			5.32	102.51			5.26	102.57	
1+50	0.00				27.00			<del>                                     </del>	71.50			·	109.50			<del>                                     </del>	148.00			<del></del>
PRECON		5.47	102.55	2.90		5.50	102.52	4.08		5.34	102.68	3.36		5.28	102.74	3.48		5 20	102.B2	3,12
POSTCON		5.04	102.79			4.97	102.86			4.87	102.96			4.90	103.03			4.75	103.09	
2+00	000				30.50				73.50				109.00				142.50			
PRECON		4.98	103.04	3.12		4.98	103.08	3.84		4.84	103.18	3.80		4.90	103 22	3.98		4.72	103.30	3.72
POSTCON		4.54	103.29			4.45	103.38			4.35	103.48			4 28	103.55			4.22	103.51	
2+50	0.00				34.00				75.00			<del></del>	106.00			<del> </del>	144.50			
PRECON		4.51	103.51	3.12		4.50	103.52	4.08	i	4.38	103.64	3.72		4.35	103.67	4.20		4.25	103.77	3.72
POSTCON		4.06	103.77		Į.	3.97	103.98			3.98	103.95			381	104.02			3.75	104.08	
3+00	000		-		29.00		+	-	74.00				108.50				141.00		·	····
PRECON		4.03	103.96	3,00		4,01	104.01	3.84		3.90	104.12	3.72		3.97	104.15	4.20		3.79	104 23	3.96
POSTCON		3.50	104.24			3.50	104.33			3.40	104.43			3 33	104.50			3.27	104.56	
3+50	0.00				32.50				76.00		i		108.50	<del></del>			148.50			
PRECON		3.56	104.46	3.12		3.53	104.49	3.96		3.43	104.59	3,64		3.39	104.63	4.20		3.29	104.73	3.72
POSTCON		3,11	104.72			3.01	104.82			2.92	104.91			2.85	104.98			2.79	105.04	
4+00	- 600		+		39.00				80.00				109.00				145.50			
PRECON		3.06	104.96	3.24		3.03	104.99	4.08		2.93	105.09	4.08		2.89	105.13	4.20		2.81	105.21	3.96
POSTCON		2.60	105.23			2.50	105.33			2.40	105.43			2.35	105.48			2.29	105.54	
4+50	- 0.00			·	35.50			+	75.00				109.00				144.00			
PRECON		2.53	105.49	3.36		2.49	105.53	3.96		2.40	105.62	3.96		2.37	105.65	4.32		2.28	105.74	3.84
POSTCON		2.06	105.77			1.97	105.96			1.88	105.95			1.82	106.01			1.77	106.06	
5+00	0.00		+		\$4.50	<del></del> †			74.50				109.00				143.50			
PRECON		2.04	105.98	3.64		2.01	106.01	4.32		1.92	106.10	4.20		1,97	106.15	4.20		1.79	108.23	3.84
POSTCON		1.53	108.30			1.46	108.37			1.39	106.45			1.33	106.50			1.28	108.55	

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PRECONSTRUCTIONPOST CONSTRUCTION

